TRACKS & TRAILS

Leonard Rossell

Boy Scouts of America

112969

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Leonard Rossell

With Sketches by the Author

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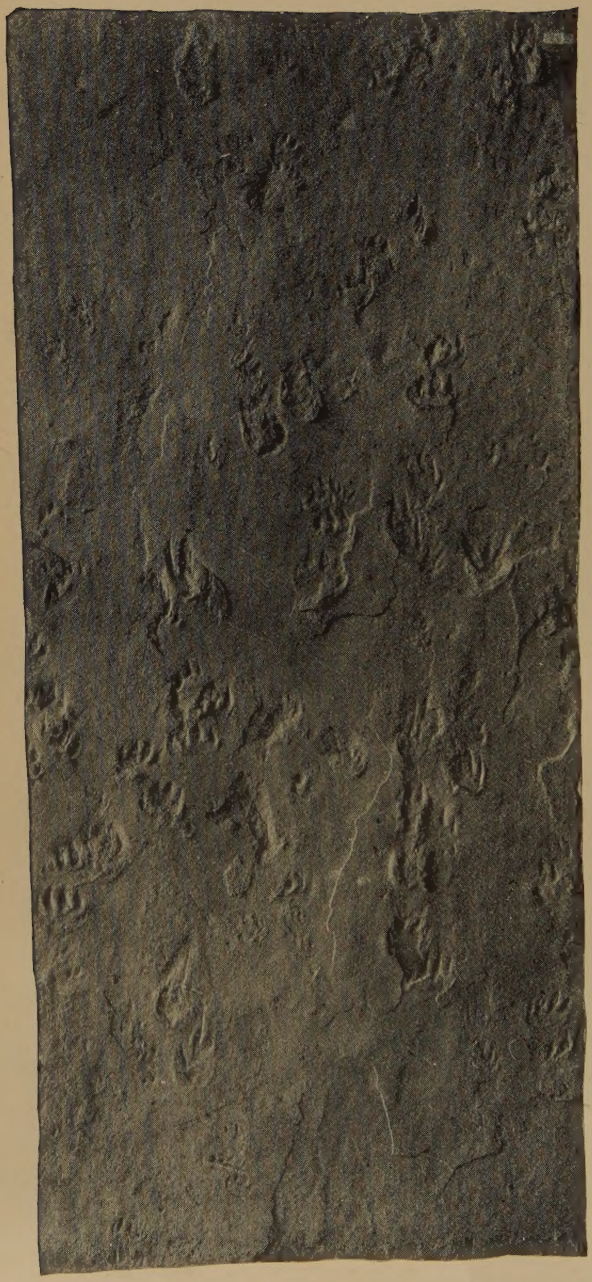
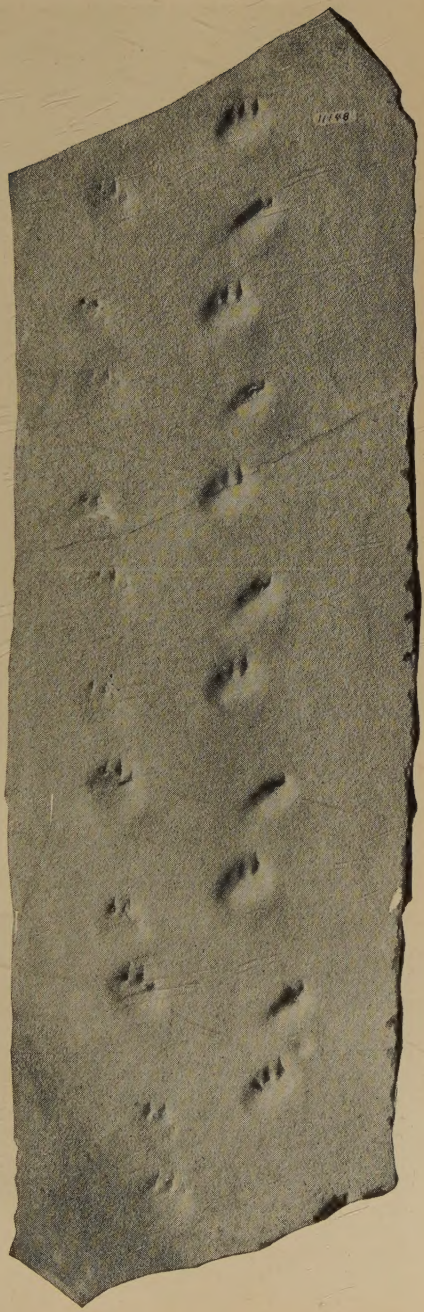


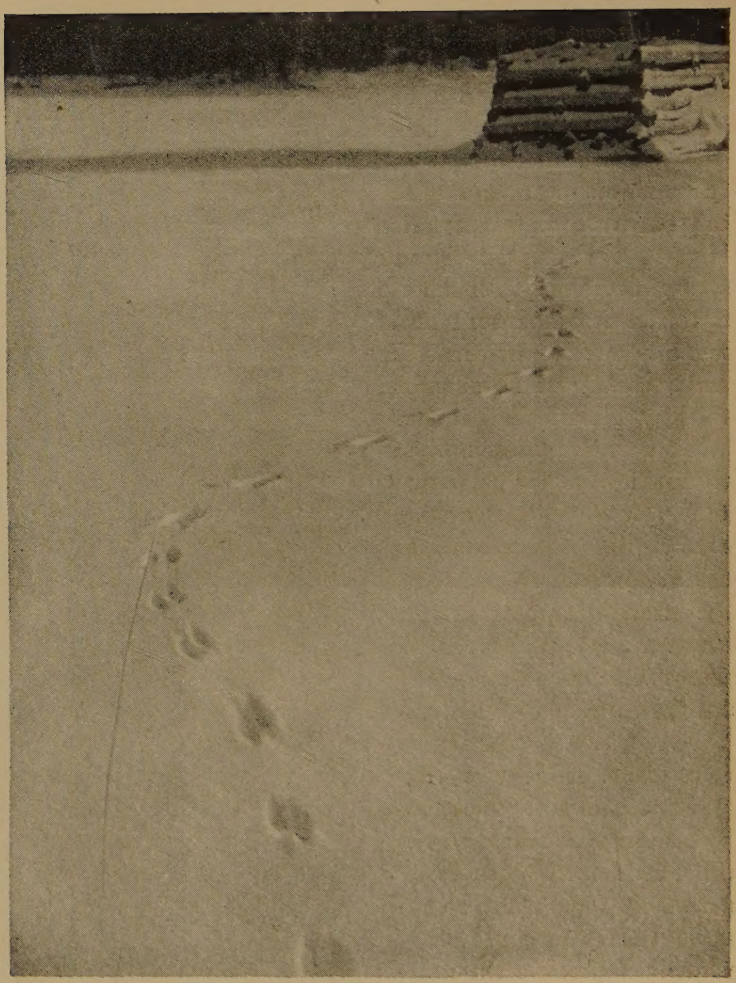
Ancient Tracks

From an Article
by
John C. Merriam
President of the
Carnegie
Institution
of
Washington
in
Scribner's
Magazine
by courtesy of
the
Author
and the
Publishers

NOT long ago some naturalists who were searching along the Hermit Trail of the Grand Cañon of Arizona for material relating to ancient life, came across some recently made tracks of a wild cat in the dust on a layer of rock. While scanning these, one of them blew away the dust and was astonished to see other, unknown, tracks beneath, hardened in the stone, the trail disappearing beneath the layers above. The tracks were not those of any animal known to scientists.

Here was the crossing of two trails. Each was clear and unmistakable; one made by a living cat that day, the other held unchanged as by a miracle from time so remote that one could only vaguely appreciate the magnitude of the intervening ages.





A Mink has passed

The photographs of tracks in snow appearing in this book were taken by Mr. Charles Macnamara of Arnprior, Ontario, Canada

TRACKS and TRAILS

Chapter I

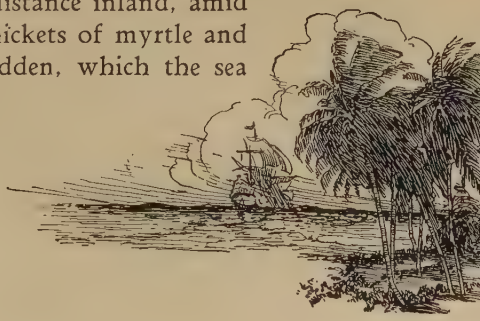
THE ISLE OF PALMS

"We will take the blue sky by storm and plunder the space as we run.
Laughters fly floating in the air like foams in the flood."

RABINDRANATH TAGORE.

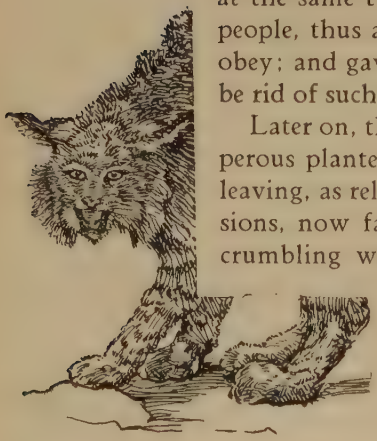
HE SUN shone down on the white sands of an island, fringed with palms, and set like a gem in low relief in a sea of cerulean blue. The sands, always light in color, were now a line of dazzling white. This long stretch would have been unbroken, but for the figure of a lonely fisherman, casting his line into the surf. Ridges of sand, washed up by the tide, were dotted here and there by long-stemmed trees, crowned with a circle of fan-shaped fronds. They stood like so many sentinels guarding the lonely shores. Hence the inhabitants called it the "Isle of Palms."

Here many a bold buccaneer had landed in the olden days, while his ship rode at anchor in the sheltered waters bounded by the mainland. In fact, legend has it, that a short distance inland, amid the dense underbrush and thickets of myrtle and cassena, treasure still lay hidden, which the sea pirates had failed to reclaim.



Be that as it may, the hope of finding a cutlass, pistol or chart had always animated the spirits of two boys who could be seen walking along the sand dunes. Harold, and his boon companion Jack, were always conscious of the romantic past: in which, as likely as not, their ancestors had played many a daring part. The intervening years, however, had obliterated most of the traces of these stirring days. Siege, fire and earthquake had also done their share of effacement. Even the oldest inhabitants had but dim recollections of the history of that earlier time.

When the sun set in glory over the sea and the dancing waves reflected the multi-colored sky above, it demanded no strong effort on the part of the boys to imagine a full-rigged privateer on the far horizon. The creeks and inlets of this and other islands near by had offered protection to the bold sea robbers. Sailing out from the shelter thus afforded, before the break of dawn, they used to startle the inhabitants with heavy cannonade, and at the same time make exorbitant demands. The people, thus at their mercy, had no choice but to obey; and gave them of their goods, the sooner to be rid of such unwelcome visitors.



Later on, the islands had been occupied by prosperous planters. These in turn had passed away; leaving, as relics of their possession, spacious mansions, now fallen into decay. Broken pillars and crumbling walls were all that remained of this

industrious period. Nature had since reasserted herself; and, at the time of our story, abundant tropical growth had encroached upon the lawns and gardens that surrounded the homes in their prime. Thus the Isle of Palms was now wilder than it had been for many years.

To Harold and Jack it possessed a never-failing fascination. Wild creatures made their homes in the interior, and numberless birds visited the sands of the sea coast. The jungle, wooded by stunted cedars, live-oaks and tall palmettos, was well-nigh impenetrable on account of the tangled vines and underbrush. Deadly snakes, gliding through the long grass, swarms of stinging insects in the air, and treacherous alligators, apparently sleeping in the swamps, were a constant menace to invaders.

On the clean, wind-swept sand dunes, however, could be read records of the animals that inhabited this tangled retreat. On the occasion in question the boys had suddenly come upon the track of a lynx. They had followed the trail of that savage creature for a mile or more, in and out of the bushes that fringed the jungle. From the size of the tracks, Harold judged that the lynx must be at least five times as large as a domestic cat. The soft sand, of course, made the prints look larger than they really were, but the boys nevertheless were by no means anxious to come upon the creature unawares. For, while

they knew him to be an arrant coward, still they had also heard tales of the great strength he possessed, and of his feline ability in using his sharp claws with telling effect.

Up one dune and down another, under the palmettos that bordered the sand, in and out among the cedars, the trail led them. Here the lynx had evidently hoped to surprise an unwary bird. Two footprints, side by side, showed that the bird had flown down from a near-by tree and had taken a few hops when the lynx appeared. Perhaps the soft sand had lessened the velocity of the cat's spring, and no doubt he felt sadly disappointed at his failure, for he continued to stalk. Soon the trail disappeared into the depths of the jungle, where the boys knew better than to follow.

A brief story of Lynx and birds, on a page of sand

Chapter II

RIDDLES IN THE SAND

"I shall start a heron soon
In the marsh beneath the moon."

WILLIAM ROSE BENET.

THE ever-changing panorama of sea and sky was a constant fascination to the imaginative Harold. He loved the deep rumble of the ocean and the little pebbly music, made by the receding breakers along the shore. The ceaseless ebb and flow was a continual wonder to him. At high tide the waves would find an opening in the ridge of sand, where they rushed through, filling up the hollows on the other side. These small ponds, constantly fed by the ocean, were frequented by numbers of plover, sandpipers, ducks and herons.

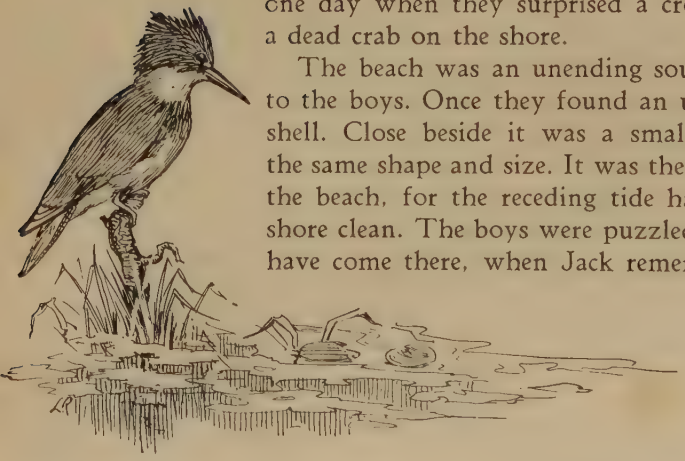
Stealthily creeping up the ridge from the beach, the boys surprised a great blue heron fishing, his long legs knee-deep in water. He remained motionless, for what seemed to them an interminable length of time. Then, without warning, he made a lightning stab with his beak, and up came a fish. One gulp and it was gone. The size of the heron's track astonished the boys, especially the unusual length of the hind toe. Evidently the wide span of his long toes prevented him from sinking in the mud.

Presently a blue and white kingfisher was seen

perched on a log, alert to catch the glint of a shining fin below the surface of the water. Suddenly, flying up from the log, he hovered on quickly moving wings, ready to plunge down at any moment.

Among the many tracks that were so numerous on the sand bordering these inland ponds, none so amused Jack as the trail of the ducks. He wondered what they had done to be thus doomed to walk pigeon-toed all their lives. Nor could he understand how they managed to avoid tripping while passing one foot over the other. He had heard, however, of Nature's law of compensation, and realized that these same ducks, which waddled so clumsily ashore, used their webbed feet when in the water both as propellers and rudders.

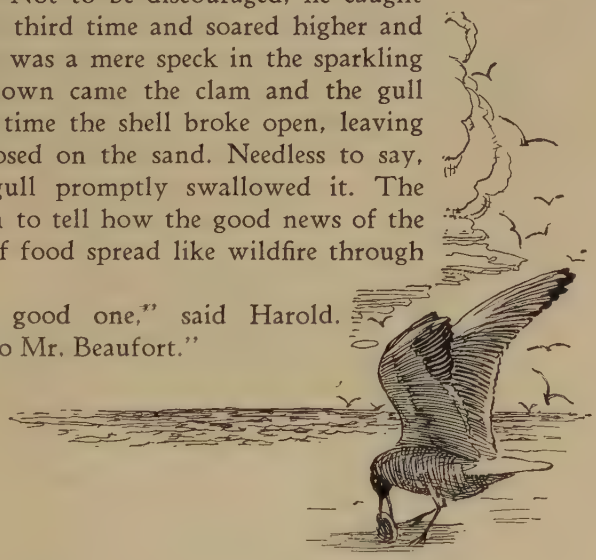
One track, common on the sand, was a mystery to them. It was not made by a wader or a swimmer. All four toes were long, the three in front being close together. But the problem was solved one day when they surprised a crow pecking at a dead crab on the shore.



The beach was an unending source of interest to the boys. Once they found an unopened clam shell. Close beside it was a small hollow, just the same shape and size. It was the only thing on the beach, for the receding tide had washed the shore clean. The boys were puzzled how it could have come there, when Jack remembered having

somewhere read an old legend of a seagull. Many a time the gull had vainly tried to work open a clam shell with his beak. Suddenly he had a bright idea. Seizing the clam he flew upwards. At a certain height he let it drop, and then flew down to see the result. But the fall had not injured it in any way. So up again he flew, higher than before, once more letting it fall. Still nothing happened. Not to be discouraged, he caught up the clam a third time and soared higher and higher, till he was a mere speck in the sparkling blue. Then down came the clam and the gull after it. This time the shell broke open, leaving the clam exposed on the sand. Needless to say, the hungry gull promptly swallowed it. The story went on to tell how the good news of the fresh source of food spread like wildfire through birddom.

"That's a good one," said Harold. "I'll tell that to Mr. Beaufort."



Terns in flight

Osprey leaving its nest

Chapter III

BIRDS OF PASSAGE

"Bluebirds are gone now,
But they left their song behind them."

HILDA CONKLING.

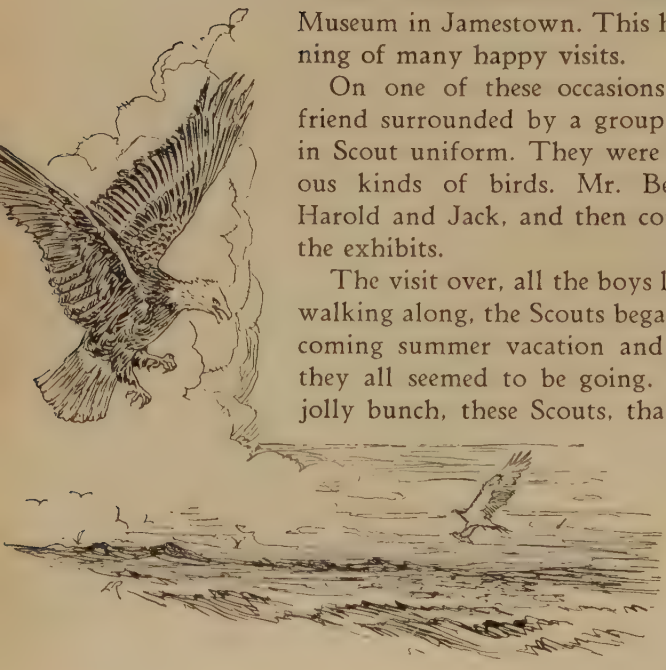
THE ISLE OF PALMS held many a mystery to baffle the inquisitive boys. Birds, that had been numerous on the island during winter, would suddenly disappear with the coming of spring. Where did they go and what did they do all the time they were away? That was the question that haunted Harold. Sometimes in the night the boys fancied they could hear the swish of many wings, as though countless hosts of birds were passing overhead. In the absence of these emigrants the marshes and ponds were filled with new arrivals, but some there were that remained throughout the year. The jungles, though, so impenetrable in summer, were more or less devoid of life in winter.

Last year, at about this time, while rambling through the wood one day, the boys came across a man searching for deserted nests. Jack wondered what he was going to do with them. Finally, mastered by his curiosity, he ventured to ask the man, who told the boy that he needed them for arranging some bird groups at the Museum in Jamestown.

Some time previously Harold had seen an osprey dive after a fish. A few moments later a bald eagle had shot down from the blue. The osprey, realizing his helpless position, immediately dropped the fish. With a downward swoop the robber caught it ere it reached the water, and bore it to his home in the jungle.

The boys recounted this incident to their newly found friend, and added that, in their endeavor to find the abode of the eagle, they had come across many an abandoned nest. Mr. Beaufort, for that was his name, thereupon made Harold and Jack his guides, and since that day they had accompanied him on many other such expeditions.

Once when parting with the lads at the ferry he had invited them to come and see him at the Museum in Jamestown. This had been the beginning of many happy visits.



On one of these occasions they found their friend surrounded by a group of other boys, all in Scout uniform. They were studying the various kinds of birds. Mr. Beaufort introduced Harold and Jack, and then continued explaining the exhibits.

The visit over, all the boys left together. While walking along, the Scouts began to talk about the coming summer vacation and the Camp, where they all seemed to be going. They were such a jolly bunch, these Scouts, that Harold and Jack

felt they would like to join them. When they learned that Mr. Beaufort, their friend, would be at the Camp, they were all the more eager to become Scouts.

While going home on the ferry they talked it over, and the next evening found them at the Scoutmaster's home.

Recognizing the boys as good raw material, Scoutmaster Meyers gave them a hearty welcome. He told them the true meaning of Scouting, explained the Oath they would have to take, and enumerated the twelve splendid clauses of the Law that they would promise to obey. As they left he lent them a Handbook, at the same time inviting them to attend the Troop meeting next Tuesday.

Feeling greatly inspired by the interview, the boys began to realize what a privilege and responsibility it was to be a Scout. Within the month Harold and Jack had passed their Tenderfoot Tests, and belonged to the Otter Patrol of Troop 3.

Track of Seagull alighting in wind, and skidding slightly

Common Tern at the moment of alighting on her nest

Spotted Sandpiper walking across improvised bridge

Chapter IV

ALL ABOARD

"Billows of green that break upon the sight
In bounteous crescendos of delight,
Wind-hurried verdure hastening up the hills
To where the sun its highest rapture spills;
Cascades of color tumbling down the height
In golden gushes of delicious light."

ANGELA MORGAN.

SCHOOL was over and all the Scouts were making preparation for Camp. Ever since joining the Troop, Harold and Jack had talked of nothing but what they would do while up there. Both the boys had earned quite a little by supplying bait to city men who sometimes came fishing on the Island. With his money Jack had bought a camera, while Harold had purchased a pair of field glasses.

It was an excited lot of boys that met at the wharf. The steam launch which plied daily up the river took them aboard. Certainly the Captain saw them all inside the cabin, but before the boat was well on its way every boy had scrambled up on top. From this point of vantage nothing escaped their notice.

They passed close to several warships anchored in the harbor, while sailors in small boats rowed to and fro between these vessels and the shore. Ships from foreign countries also were unloading or taking on cargo.

Gradually the river narrowed and the banks became beautified by many a picturesque home surrounded by lovely gardens, where clinging moss on the live-oaks swept the water's edge. Soon the scene grew wilder, and over the marshes flew buzzard, heron and osprey, while on the shore an occasional camp appeared.

The boat stopped at several places on the way to enable passengers to land.

A wild hurrah rose from the lads as the Scout camp came in sight. The Captain was glad to have the boys all safely landed. He wondered when he would handle such a hilarious crew again.

Chapter V

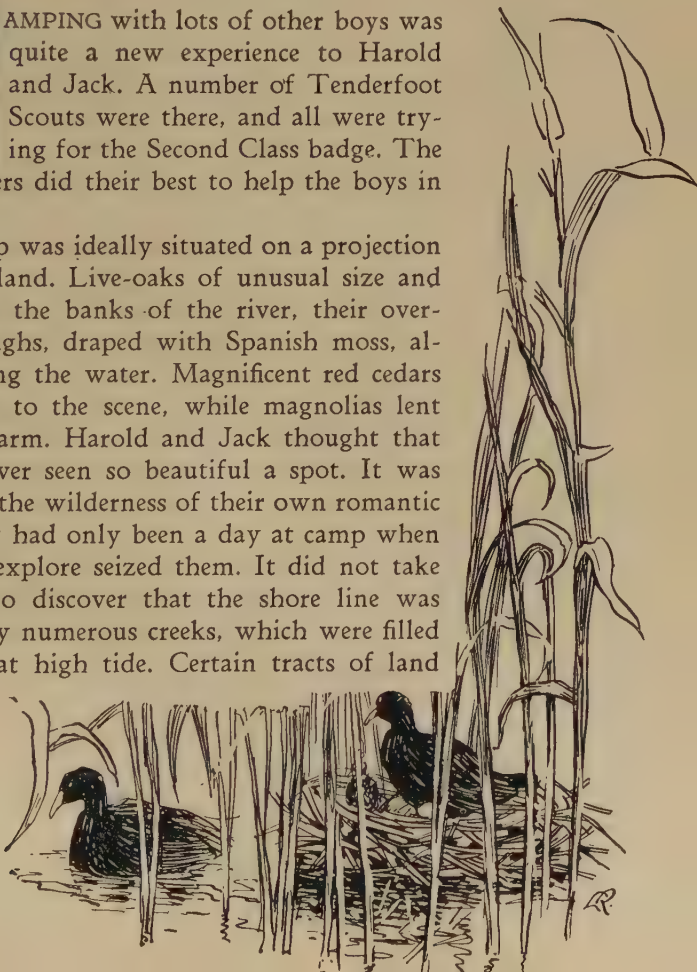
HOODWINKED BY MOLLY COTTONTAIL

"I know
Where the wind flowers blow!
I know,
I have been
Where the little rabbits run
In the warm, yellow sun!"

IRENE RUTHERFORD MCLEOD.

AMPING with lots of other boys was quite a new experience to Harold and Jack. A number of Tenderfoot Scouts were there, and all were trying for the Second Class badge. The Patrol Leaders did their best to help the boys in every way.

The Camp was ideally situated on a projection of the mainland. Live-oaks of unusual size and beauty lined the banks of the river, their overhanging boughs, draped with Spanish moss, almost touching the water. Magnificent red cedars gave dignity to the scene, while magnolias lent an added charm. Harold and Jack thought that they had never seen so beautiful a spot. It was quite unlike the wilderness of their own romantic island. They had only been a day at camp when the urge to explore seized them. It did not take them long to discover that the shore line was broken up by numerous creeks, which were filled with water at high tide. Certain tracts of land



were under cultivation, but the interior remained a virgin forest.

After a while Mr. Beaufort, true to his word, came up to the Camp. He was instantly in great demand, for all the boys wanted to learn about the wood folk, and every First Class Scout was anxious to pass the tests for the Stalking and Bird Study badges. This, of course, meant a lot of hiking. Mr. Beaufort said he would take one Patrol at a time, as too many together would scare all the wild creatures away.

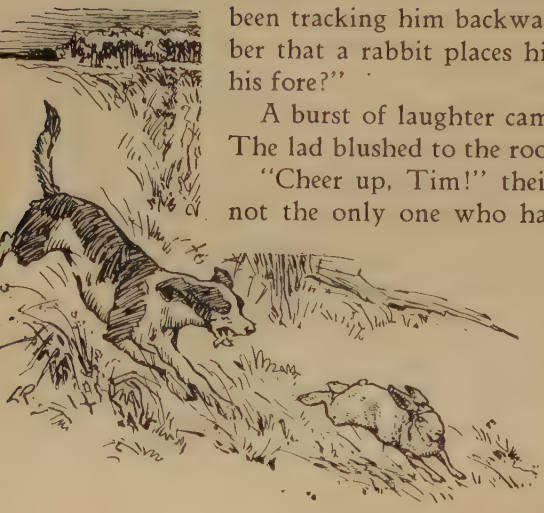
Early next morning they set out with their leader for the woods. On the way Tenderfoot Tim, a little ahead of the others, came across a track in the dusty road. He followed it excitedly. It led to some bushes and then disappeared. He was trying to unravel the puzzle when the rest came up.

"Oh, Mr. Beaufort, look at this track!" cried Tim. "I'm going round the bush to see where he came out."

"This isn't where he went in, Tim," said Mr. Beaufort. "This is where he came out. You have been tracking him backwards. Don't you remember that a rabbit places his hind feet in front of his fore?"

A burst of laughter came from the other boys. The lad blushed to the roots of his hair.

"Cheer up, Tim!" their leader said, "you are not the only one who has made that mistake."



Tim now followed the track the right way and found that the distance between the sets of fours gradually diminished, the forefeet continually gaining on the hind until, after a while, the trail stopped, with the forefeet in front. It seemed as though something must have alarmed the rabbit at this spot, for he had turned aside into the tall grass. Tim wondered what it could have been. The answer was close at hand, however, for some rounder tracks, not far away, showed that a dog had been fast on Bunny's trail.

"Correct," said Mr. Beaufort, as Tim told him the story he had read in the tracks.

Pointing to a runway about five inches wide, where the rabbit's tracks had ended, Mr. Beaufort said: "If you could follow that tiny path, you would soon find it was crossed by another, and yet another, and would realize that you were in a perfect maze of little paths, most of them leading nowhere. Molly Cottontail has many enemies and this is one of her methods of escaping them. Imagine how disconcerting these by-paths must be to a hungry fox who has picked up Bunny's scent as she is feeding in a field of clover! Molly makes for the runway and reaches it just ahead of her pursuer. He scents the trail to one of these paths, only to find it a blind alley. Retracing his steps, he again picks up the scent, but soon loses it once more in a similar way. After vainly attempting to unravel the

tangle, he at last gets discouraged and gives up."

"Hasn't Molly any home?" inquired Tim, anxiously.

"Not what you or I might consider one," replied Mr. Beaufort. "She believes in 'squatter's rights,' and chooses an open spot, often near a stone or fence, where she makes her 'form.' It is usually on a slight elevation, giving her a good view, and permitting her to catch the scent of any hostile creature.

"As a rule Molly Cottontail is obliged to take life quite seriously, but sometimes on a moonlight night she is to be seen skipping merrily about with her friends, her white tail bobbing up and down like the spotlight on a dancer. Knowing of her giddy antics, Reynard will lie in ambush and, when the fun is at its height and the circle widens, he will make a spring at the nearest reveller.

"Nor are the rabbit's enemies hiding only in the bush. Danger hovers even overhead. Silent as a snowflake, with only a shadow for warning, a Great Horned Owl will swoop down on its helpless prey, grasp it greedily in its talons, and fly away to devour it in some secluded spot."

After walking through the woods for a short time the party came to a low-lying spot, bare of vegetation. It was under water most of the year, but the past two months of continuous heat had completely dried it up. Now it formed an ideal

Trail of Fox and Rabbit in soft earth

tracking ground, being composed of sandy loam, and as it was situated between the woods and fields many animals and birds frequently passed over it.

The first track that caught their eye they recognized as being that of a dog. A few yards away was another trail, and Mr. Beaufort waited for the boys to figure it out.

"They seem to be about the size of a fox's footprints," said one of the lads.

"So's your Aunt Tilly!" retorted rough and ready Bill. "A fox has a foot like a dog," he added sternly. "Well, it can't be a 'possum, for he wouldn't gallop like that," came from another.

"Oh, I know!" exclaimed Fred, whose father was a farmer. "That's a raccoon track. One of those rascals killed some of our chickens."

"You win, Fred," said Mr. Beaufort. "Notice the clear hand-like impressions. The raccoon is a plantigrade or sole-walker; that is, he walks on the flat of the foot. Bears, porcupines, rabbits and squirrels do the same. He is often called the little cousin of the bear. The only resemblance, however, seems to be in the shape of his hind feet, which, as you see, rest flat on the ground. Perhaps, also, the fact that he is very dexterous with his forefeet, using them as hands, is responsible for the comparison. Indeed, altogether, the little creature displays an extraordinary intelligence.

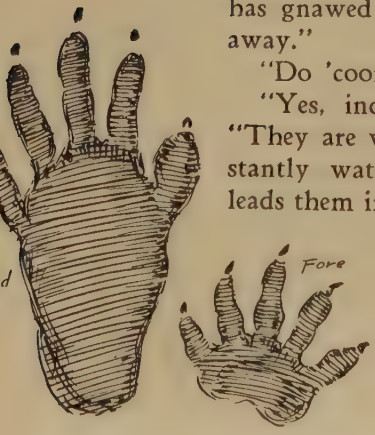
Trail of barefoot boy and Raccoon on dusty road

"The raccoon catches frogs, turtles, clams; and, to vary his diet, wanders in the woods in search of nuts and berries. He has a very dainty habit of thoroughly cleansing every bit of food in a running brook before it is consumed. He is seldom seen abroad in the daytime, but, as you all know, the midnight marauder frequently runs into danger while robbing the cornfields. Once when he was being hunted, with a pack of dogs on his scent, I saw him lure his pursuers into water, where he was very much more at home than they. There he tackled them one by one, and after a few of the dogs were drowned, the rest thought it best to give up.

"While the raccoon makes his home in a tree, the greater part of his life is spent hunting for food by the borders of streams and lakes. Along these banks you can see how busy he is by the many trails leading to and from the water's edge. Some people set traps for the raccoon, on account of their fur, but it is a very cruel practice, for, when caught, they are often left to die of slow starvation, and sometimes an unfortunate captive has gnawed off his foot in an endeavor to get away."

"Do 'coons make good pets?" inquired Tim.

"Yes, indeed they do," said Mr. Beaufort. "They are very interesting, but have to be constantly watched, for their insatiable curiosity leads them into a lot of mischief."



Raccoon tracks, one-half life size

By this time the sun was fairly high in the sky and Mr. Beaufort suggested that they seek the shelter of a tree. While they were resting beneath the spreading branches of a sturdy oak, Patrol Leader Larkin surprised the boys by suddenly producing from his satchel some tempting sandwiches, which he proceeded to pass around.

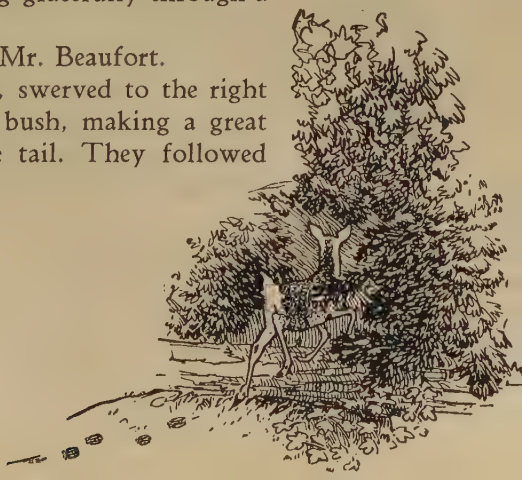
"The cook thought we might need them," he explained.

While everybody was enjoying this unexpected refreshment, Larkin quietly stole away, but soon reappeared, carrying a pail of goat's milk, which he had obtained from a neighboring farm. The boys greeted their Patrol Leader with loud cheers, which nearly made him spill the milk. Then, after setting the pail down in the centre of the group, he again went to his satchel and brought out several sheets of paper. He gave one to each of the boys, and showed them how to fold the paper into cups. On tasting the rich foamy cream, Harold and Jack resolved to take a Nanny Goat back with them when returning to their Island.

Presently Mr. Beaufort thought it was time to be going back to Camp. As they walked homeward a deer came bounding gracefully through a forest glade.

"Keep still," whispered Mr. Beaufort.

The doe, scenting them, swerved to the right and leapt over a bramble bush, making a great show of her snowy-white tail. They followed



cautiously to see where she had gone. There, in the distance, the doe stood, a beautiful sight, with head held high and small ears alert, her sensitive nostrils searching every passing breeze. It was only a momentary picture, however, for presently she bounded over the long grass and was soon lost to view.

The party approached the spot where she had first turned aside, and there, in the soft ground, discovered a few tracks. Mr. Beaufort called the boys' attention to the graceful shape of the print, with its continual curve pointing forward to the centre.

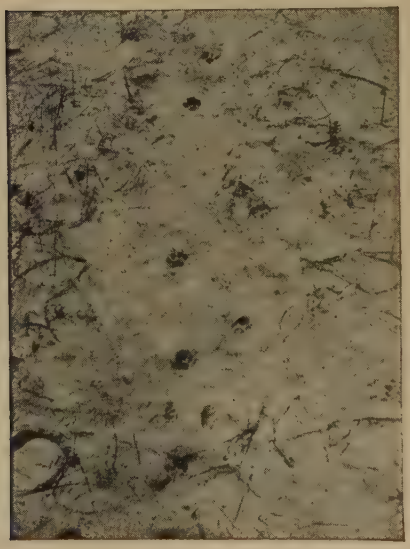
"When you come across the track of a sheep or a wild hog," he said, "you will notice a distinct difference, for the tracks of the latter two are always more spread and are less pointed at the forepart of the hoof."

Passing by a cypress swamp the lads noticed dozens of snowy egrets nesting there. Right overhead a flock of wood ibises soared in the blue, their black and white plumage dazzling in the sun.

Emerging from the woods, but keeping among the thickets by the bank of the river, they soon became aware of the presence of innumerable birds twittering and fluttering among the many branches. The gay cardinal was there in his suit of red; brown thrashers, blackbirds, redwings—all contributed to give a continual sense of ever-moving beauty.

Presently they came to a clearing and the sudden view of tent tops told them that camp was close at hand. They quickly covered the remaining ground, and on arriving the tired but happy boys all talked at once, in their eagerness to tell the others of the thrilling experiences of this memorable trip.

Baby Cottontail



Above, a Rabbit and an Opossum, and, at the left, a Raccoon, an Opossum, a Fox and a Rabbit, in turn, have left their footprints here

Chapter VI

SAMBO TRACKS A 'POSSUM

"Loveliest of trees, the cherry now
Is hung with bloom along the bough."

A. E. HOUSMAN.

AT BREAKFAST one morning Mr. Beaufort told the boys to be sure to take pencil and paper with them on the hike that day. "Those of you who have cameras, bring them along too," he added. Then, turning to Patrol Leader Larkin, he said, "In the corner of my tent you will find a bag of plaster of paris, which we shall need. Will you be responsible for that?"

"Certainly, sir," replied Larkin.

"We shall also require a pail and a small enamel bowl," Mr. Beaufort added.

"I'll get those from the kitchen," volunteered Tim.

"Fine!" replied Mr. Beaufort, "and all be ready promptly."

At 8.30 sharp they were on their way. Passing a stream, Tim stooped and filled his pail. They headed for the place where they had found the raccoon tracks a few days ago; for that was the most promising location they knew of.

As they reached the belt of sandy loam, a loud exclamation from Bill caused them all to turn around. He had caught sight of a most unusual track.

"It might have been made by a goblin!" said Tim, coming up to examine it.

"What long nails! Where is the mark of his thumb nail, though? It looks as though he didn't have any."

"It certainly is a unique track," said Mr. Beaufort, "but you are all familiar with the creature that made it. What little mother carries her babies in a pouch?" "The 'possum," they all cried in chorus.

"Correct!" replied Mr. Beaufort. "Suppose we make a plaster cast of the track. Jack, run and get a stick, and Tim, please put a little water into your bowl. Now for the plaster, Larkin. Pour it gradually into the water, while Jack stirs it thoroughly. I will put these thin strips of cardboard round the two best tracks, and fasten the ends with paper clips."

"How thick should the plaster be?" asked Larkin.

"About the consistency of dough," replied Mr. Beaufort. "If it is too thick it will harden before you have time to pour; and if too thin, it is liable to crack later. That's about right. Tap the side of the bowl to break up any bubbles. Now pour it quickly but gently on to the track, preferably from one side till the plaster is about an inch and a half deep. The cast will then be strong. Now we'll leave it to dry thoroughly. Tim, you had better empty the bowl and clean

Plaster cast of fox hind track

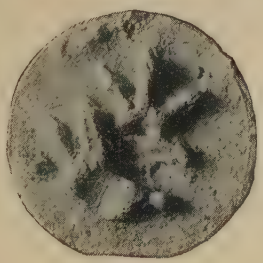
it right away, before any remaining plaster has a chance to harden."

"How long will the cast take to dry?" inquired Harold.

"It should be ready in ten or fifteen minutes," Mr. Beaufort said. "On a cold or damp day it would take a little longer. I know it seems a long time to wait, but you wouldn't want to spoil it for the sake of a few minutes, would you? Now, before it is too hard, suppose Harold engraves on it the word 'Opossum,' the date, and 'C. W.' for Camp Wapoose. Bill found the track, so let's add his initials."

The fifteen minutes were now up, so Mr. Beaufort dug the cast out carefully with his Scout knife, and washed it, cleaning the crevices with an old tooth brush. There it was, in high relief, an exact impression of the 'possum's right fore and right hind feet, touching each other. Mr. Beaufort pressed the cast into the mud and the Scouts saw that it made a clear imprint. The boys were lost in admiration, and Bill said he wished he could hang the cast up.

"Well," replied Mr. Beaufort, "next time you make a cast, insert a ring in the top while the plaster is still wet, and you'll have an attractive plaque for your wall. This cast is called a negative, Bill, and when we get back to Camp, you can make positives from it for the other boys. All you will have to do will be to rub this thor-



Plaster cast of Opossum's fore and hind tracks

oughly with vaseline, covering all the crevices; place a paper collar around it, higher than the cast; and pour some plaster into the collar and on to the track. When this is hardened, you can separate the two."

"Now let's take a picture of the rest of the trail," said Mr. Beaufort, addressing the boys.

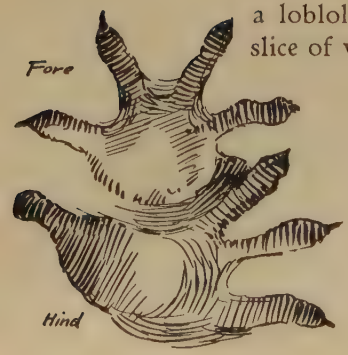
Jack and several of the others got out their cameras and focussed them on the trail.

"No, I wouldn't take it from that position, Jack," said Mr. Beaufort. "Come over here and face the sun. Now you can see the shadow on the track. I will shade your lens while you snap it. Attaboy!

"Now that we have a cast and photograph, all that we need to complete the collection is a drawing. Perhaps Harold will make us a life-size sketch of the right fore and right hind; and then copy the trail a little way to show the gait. Make it a plan drawing to scale, Harold. While he is doing this, suppose we sit down over here; and, if you like, I'll tell you a story."

"Oh, please do, sir," they all said. And so he began.

"Once, when the wild black cherry was in bloom, darkies were chanting gaily, as they toiled on a sugar plantation. Towards noon they sat down to rest for a while beneath the branches of a loblolly pine. Here, as they were enjoying a slice of watermelon, Sambo told his comrade that



Opossum tracks, two-thirds life size

he had seen some opossum tracks at the edge of a swamp, on his way to the plantation that morning. The friend grinned broadly, his white teeth flashing in the sun. They laughed merrily together and decided to go hunting after sundown.

"That night, while a full moon rose slowly over the pines, they started out.

"On reaching the swamp they soon found the opossum's tracks recorded in the mud. The darkies had hunted raccoon, too, in this very spot, but not for a moment did they confuse the tracks, for the peculiar hand-like mark of the hind feet, the characteristic tail drag, and the five well-separated toe marks in the print of the forefeet, making an impression as clear as the claws of a bird, were unmistakably those of an opossum. The gait showed that the animal had proceeded in a slow leisurely fashion, which, in fact, was the only pace the dull-witted fellow knew. Scenting danger, but lacking the cunning of the raccoon, who has many tricks of circumvention for fooling his pursuers, the opossum had made straight for home.

"Here and there, however, where the ground was hard, all signs of him disappeared, and it was only by casting around in circles that Sambo and his friend presently discovered a tiny path of beaten-down grass. They followed this a little way until, about twenty yards from his home in the hollow of a decayed cypress tree, they saw the

opossum lying limp and apparently lifeless. But there was no wound on his hairy body, so he could not have been killed by any marauding creature of the wild. Neither could lightning have struck him on such a calm night. Sambo went up and gave him a gentle kick, but the animal only rolled over. The darkies, however, had seen this stunt before and strongly suspected that he was only 'playing 'possum.' To make sure, they pulled his tail, and by the resistance offered knew that the little pretender was very much alive. They picked him up. Yes! the body was quite warm; so, laughing gaily, the darkies took him home."

Young Black-Crowned Night Heron's first venture from home

Chapter VII

SNAPPING A SNOWY EGRET

"A strange white heron rising with silver on its wings,
Rising and crying
Wordless, wondrous things."

WILLIAM ROSE BENET.

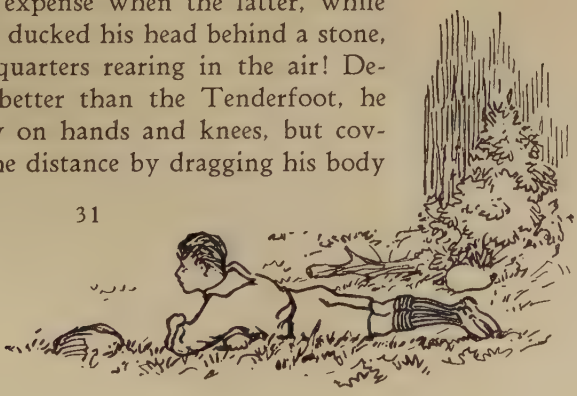
JACK came running into Camp early one morning in search of his camera. He had seen some snowy egrets feeding among the weeds at the edge of the river.

"You will have to do some careful stalking to get near those birds," warned the Patrol Leader.

Fortunately a few scattered trees grew along the bank, and these enabled Jack to remain hidden while approaching the place where he had first caught sight of the birds. A fleet glimpse of white told him they were still there. All at once he spied a log.

"If I can manage to reach that without scaring them," thought Jack, "why! what a picture I'll get!"

He then remembered how the boys had enjoyed a joke at Tim's expense when the latter, while stalking one day, ducked his head behind a stone, leaving his hindquarters rearing in the air! Determined to do better than the Tenderfoot, he crawled half-way on hands and knees, but covered the rest of the distance by dragging his body



after the manner of a seal, over the ground.

Reaching the log without being seen, he peeped round the end and discovered that he was within a short distance of the nearest egret.

"If I try to get any closer I'll spoil the whole shooting match," he reasoned, so he set his camera for that distance and snapped. Fortunately the click did not disturb the bird.

Realizing, however, that this was in the shade and might not be a very good picture, he waited a while. Presently the bird, stirring among the rushes, came out into the full sunshine. Her snowy plumage was a beautiful sight against the green background of reeds. Jack held his breath in awe and admiration. Then, remembering his quest, he carefully focussed his camera and took another picture.

This was the first time Jack had stalked a bird, and, feeling highly elated at his success, he returned to Camp, whistling all the way.

Chapter VIII

WINGED NEIGHBORS

"I meant to do my work to-day—
But a brown bird sang in the apple-tree
And a butterfly flitted across the field,
And all the leaves were calling me.
And the wind went sighing over the land,
Tossing the grasses to and fro,
And a rainbow held out its shining hand—
So what could I do but laugh and go?

RICHARD LE GALLIENNE.

"DID YOU KNOW that there were wild turkeys in the woods?" announced Jack one day.

"None of us have ever seen any yet," said Scoutmaster Meyers, who had been at the Camp several seasons.

"Well, Harold and I found what looked like the track of a turkey. It was near the woods, and I don't know of any other bird that would make so large a track. We also discovered where they had been scratching on the ground and could tell the trees on which they had perched, because of the droppings. Harold sketched the track."

"Let's see it, Harold," said Mr. Beaufort. "Well, that's a turkey's track all right," he continued. "Now a heron's would be much slimmer, of course, and he leaves a long hind toe mark. Where did you make this other sketch, Harold?"

"Oh, Jack and I found that yesterday in Mulford's Meadow."

"That was evidently made by a quail," commented Mr. Beaufort. "They probably go there to take a sand bath. Have you any more drawings?" he inquired.

Harold produced drawings of the tracks of quail, heron, crow, seagull, plover, coot, duck and sandpiper, most of which he had made on the Isle of Palms. "Those are very good, aren't they, boys?" said Mr. Beaufort, and he went on to point out the difference between the tracks of the various birds.

"The land birds, such as quail, have rather small feet. They are compact and suitable for walking on dry land. The toes of the perching birds are slight, the three front ones being close together. This, in addition to their hind toe, enables them to grip the branches of trees.

"Besides the perching and land birds there is a group that live on both land and in trees, such as pigeons and doves. Their feet are broader than those of the perching birds, but are narrower than the feet of the land birds, and they also have a hind toe that shows in the track.

"In this sketch of a duck's track you will notice the mark of the webbed toes. It is typical of the true water bird. There is another group that live on land and water, such as the coot and the grebe. They are paddle-footed, possessing wide flat toes. Most of these are our neighbors. Perhaps before camp is over we shall know them better."

Chapter IX

STALKING A WILD TURKEY

"There is a pleasure in the pathless woods."

BYRON.

THE BOYS revelled in the many camp activities such as fishing, swimming and rowing. But Harold and Jack were none the less delighted when Mr. Beaufort one evening made a suggestion. They were walking with him towards his tent when he turned rather unexpectedly and said: "I can't forget those turkeys you spoke about, Jack. I do wish you'd show me where it was that you found their tracks." So they planned there and then to go stalking on the morrow.

Next day, when the boys appeared at Mr. Beaufort's tent, Harold had his camera slung over his shoulder.

"You certainly are optimistic," said Mr. Beaufort, "but we can hardly expect to get so close to a turkey as all that. There is not a bird in the woods so hard to stalk as he."

The three made straight for the edge of the pine woods, where the boys had seen the tracks several days before. Looking around they found fresh signs, proving that the turkey had been there quite recently.

"They are fond of the margins of cultivated fields," remarked Mr. Beaufort, "for there they

can find plenty to eat. Suppose we go over to that ledge and watch."

The place provided a good view, and at the same time was partly screened by bushes. The stalkers had not long to wait, for presently the sun's rays shone on the beautiful bronze plumage of a magnificent wild turkey.

"I wish we could get nearer," said Jack eagerly.

They promptly dropped on hands and knees and crawled noiselessly along the ground. The turkey must have seen the top of the long grass waving, for he moved to a safer distance. After a moment he began scratching in the leafy soil, but he seemed a little uneasy and would continually stop to look around and listen. His bright beady eyes kept watch over the entire landscape the whole time he was feeding.

For quite a while they kept up this game of hide and seek, for, no matter how cautiously they stalked, the wary bird would not allow them to get any nearer. Finally, as though tired of dodging, the great bird took to wing. They watched him rise and fly to the topmost branch of a pine.

"Well, I'm afraid that spoils our chance of taking a close-up this time," sighed Mr. Beaufort, "but we'll try again another day. And when you next go stalking, Harold, it might be a good idea to wear your khaki shirt instead of

that white one. You have noticed how birds and animals usually blend with their surroundings, sometimes making it impossible for us to see them. We must follow suit or else we in our turn can hardly hope to avoid being seen.

"I wonder which way the wind is blowing," he added, wetting his finger and holding it up. "From the south," he exclaimed.

Jack wanted to know how he could tell.

"The cool side of the finger shows that the wind is blowing from the direction it faces," replied Mr. Beaufort. "It wouldn't be any use going into the woods if the breeze carried our scent there before us, for animals, as you know, have a wonderfully keen sense of smell, which they rely upon to an even greater extent than they do upon sight or hearing. When stalking any creature, therefore, remember to make sure that the wind is not blowing its way.

"Let's follow this little stream through the woods. Walk carefully for fear of snakes!"

The boys could not help admiring the way Mr. Beaufort moved through the underbrush. He might have been an Indian, so silently did he go. They stopped at the foot of a red cedar.

"Shall we rest here a while?" suggested Mr. Beaufort.

Soon a scampering and chattering right overhead attracted their attention. Looking up, they saw two fox squirrels engaged in chasing one

Happy Grey Squirrel

another up and down a pine tree, each evading the other with great agility. The furry fellows were jet black, except for the white on ears and nose.

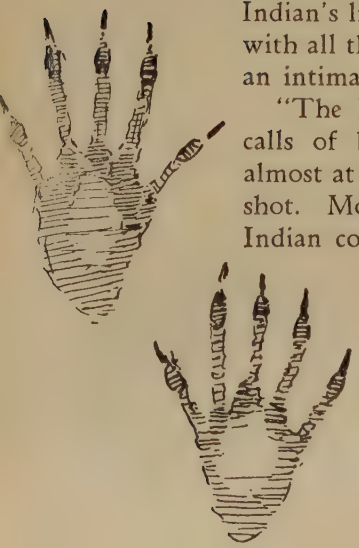
"We could probably find their tracks near the water," said Mr. Beaufort. So they crawled down the bank and discovered that one of the squirrels had been there to slake his thirst. They recognized his track by the distinct pad marks and the pairing of the forefeet.

"They are larger than those of the grey squirrel," Mr. Beaufort remarked.

A little further up the stream the three recognized many other tracks. Evidently opossum, raccoon and mink, also went to drink at the same river.

On the way home the three began to talk about the Indians, who, centuries ago, lived in this country before the coming of the White Man. The experiences of the day had set Harold wondering how they ever got within close range of the animals. Mr. Beaufort told him that the Indian's life in the forest and his close association with all the wild denizens of the woods gave him an intimate knowledge of their habits.

"The Redskin," he said, "could imitate the calls of birds and animals so accurately that, almost at will, he could bring game within bow-shot. Moreover," Mr. Beaufort added, "the Indian could scent the presence of such animals



Fox Squirrel tracks, life size

as the fox, puma or deer before they came into view, and, of course, the creatures were much more numerous then than they are now, and were not nearly so timid."

Jack had read many stories of the adventurous pioneers. In fact, his favorite heroes were Daniel Boone and Kit Carson.

"My! I should like to have lived in those days," he exclaimed. "Boys were real boys then."

"Yes," replied Mr. Beaufort, "the children of the early settlers, like the Indian children, were taught many sports, all of which were designed to fit them for the rôle they had to play later in life. They wrestled, they jumped and played many rough and tumble games. Then, boys, even when very young, had their own duties. They were commissioned to find cattle which had strayed. This was no easy task and was beset with many dangers, for prowling Indians might be anywhere in the forest. For a lad to be able to conceal himself and at the same time watch the silent movements of the savage was real stalking His degree of accuracy in distinguishing certain sounds, such as the stealthy tread of a lynx, the rub of one tree against another, the chatter of the squirrel, the flutter of the leaves, and the soft step of the moccasin-footed Indian, might mean life or death to the youthful pioneer."

A Squirrel's tracks "pair," whereas the Rabbit's rarely do— *see page 18*

Common Tern on nest

Spotted Sandpiper bewildered, though her babies are behind her in the photographer's cap

Chapter X

AROUND THE CAMP FIRE

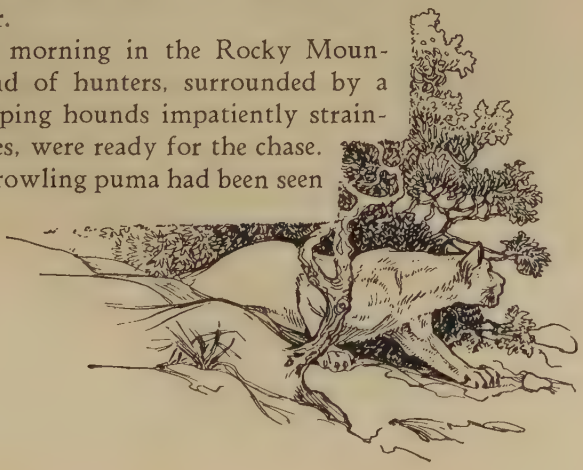
"Who hath smelt wood smoke at twilight? Who hath heard the birch log burning?
Who is quick to read the noises of the night?
Let him follow with the others, for the young men's feet are turning
To the camps of proved desire and known delight."

RUDYARD KIPLING.

FTER a strenuous day in the open air, roaming the woods, swimming or hiking, what pleasure can be compared with that of joining the circle around the Camp Fire? Here friendly faces are lit up by the glow of burning logs, and the flickering light plays upon giant pines, while myriad stars keep silent sentinel. Everywhere a mystery pervades—soft, invisible, impalpable. Under the spell of the leaping flames what wonderful tales are told as fancy wings its farthest flight—stories of strange adventures, legends and Indian lore!

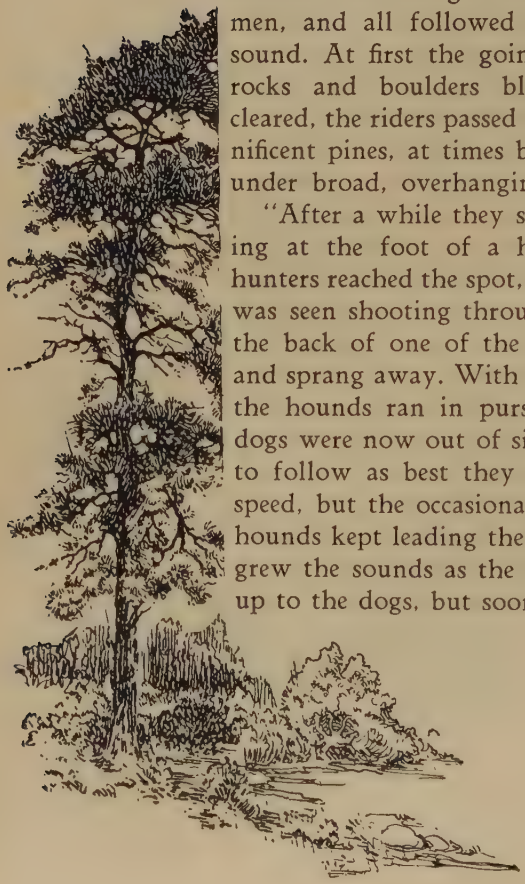
Picture, then, this happy ring of boys listening intently to the exciting tale related by Scoutmaster Meyers. His thrilling tones came clearly in the cool night air.

"It was early morning in the Rocky Mountains, and a band of hunters, surrounded by a pack of eager yelping hounds impatiently straining at their leashes, were ready for the chase. The tracks of a prowling puma had been seen



in the vicinity. They were larger than those of any other member of the cat family in America, excepting the jaguar. The marks of the left hind foot measured four and a half inches, while the stride was about three feet long. In the trail he left, the tracks often registered, and at times there was a space of about twenty feet between them, where the lion had made a flying leap.

"Presently the dogs were off, and soon outrunning the horses. Then a bark was heard in the distance. 'He has got the scent,' cried one of the men, and all followed in the direction of the sound. At first the going was rough, for many rocks and boulders blocked the way. These cleared, the riders passed through avenues of magnificent pines, at times being forced to bend low under broad, overhanging boughs.

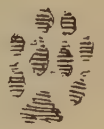


"After a while they sighted the hounds, yelping at the foot of a huge fir tree. Before the hunters reached the spot, however, a yellow streak was seen shooting through the air. It landed on the back of one of the dogs, bowled him over, and sprang away. With noses close to the ground the hounds ran in pursuit. Mountain lion and dogs were now out of sight, and the hunters had to follow as best they could. They made little speed, but the occasional barking of some of the hounds kept leading them on. Louder and louder grew the sounds as the hunters gradually caught up to the dogs, but soon the way was barred by

tremendous rocks, and the riders were obliged to dismount.

"They tied their horses and proceeded on foot. Presently they came to a dead halt on the rim of an overhanging ridge. Hearing the dogs barking below, one of the men climbed down to a lower ledge, and there, not many feet away, crouched the long slender form of the lion, its coat of golden red vying with the sunrise. Evidently the dogs had succeeded in treeing the lion, which then made a desperate leap to a rocky ledge above.

"Surrounded by his enemies, the lion could now only jump from ledge to ledge, and in this manner he reached the valley below before even the yelping hounds were aware of his escape. But the hunters had barely scrambled to the foot of the hill when the dogs again took up the scent, and horses and hounds ran pell-mell once more. A fresh series of yelps echoed through the glades, proclaiming that the animal was again treed.



"The hunters rode up and dismounted. The next moment one of them had climbed up after the puma. From a lower branch he threw a lasso. It landed over the creature's head and the noose tightened. Then, with the other end of the rope, the man slid down the tree, till finally he touched the ground. Two more men pulled and jerked the lasso, and the snarling lion was gradually dragged down. Other ropes, deftly thrown, soon

made a complete captive of the unfortunate puma.

"But we must not spend too much sympathy on the victim," added Scoutmaster Meyers when he saw that tired little Tenderfoot Tim was almost ready to cry, "for he really was an outlaw, and the depredations he had made among the ranchers' cattle and the many game animals he had slain had caused him to be the object of such a relentless hunt."

Chapter XI

SAILING TO MAINE

"Adieu, adieu, my native shore
Fades o'er the waters blue."

BYRON.

THE BOYS had enjoyed several happy weeks at Camp, when one day Jack received a letter from home. In it his mother said that she had been feeling the heat more than usual that summer and had decided to pay her brother a long promised visit.

Uncle John had a farm up in Maine, and as his mother planned to stay there a considerable time, she wanted Jack to accompany her. Jack's father was second mate on a ship which plied up and down the Atlantic Coast, and so was away from home most of the time.

Excitedly Jack sought Harold to tell him the news. It seemed as though they were to be separated for several months. Harold thought it would be rather lonely on the Island without his chum. However, Jack said: "My father will be coming up for Christmas and I know he would like to bring you with him, for I am sure Uncle John would be glad to see you."

"Wouldn't we have a bully time!" replied Harold. "I've always wanted to see the snow, and maybe we'd learn to skate and ski."

So Jack packed up his kit, said good-bye to

all the Scouts, and thanked his Patrol Leader, Mr. Beaufort, and Scoutmaster Meyers for all their kindness. The Camp had been a wonderful experience, and had taught him a great deal—things he would never forget.

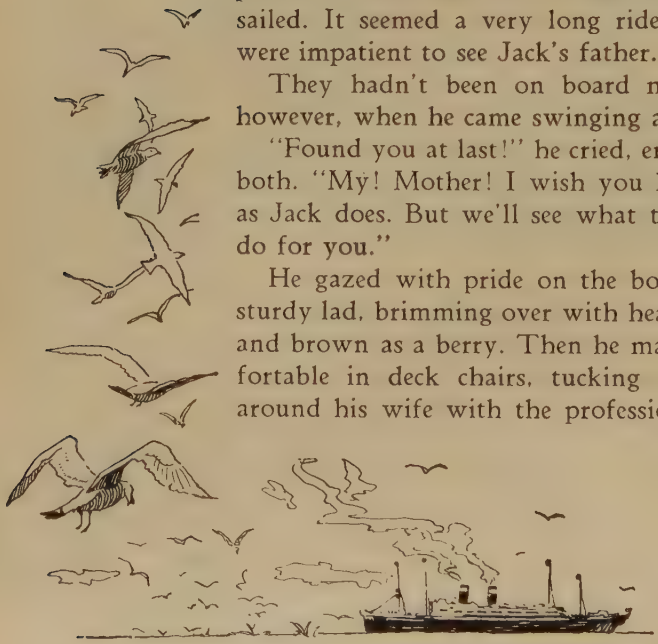
Sailing home in the launch the following day Jack thought of the hundred and one things he would do up North. He had often wanted to see more of the world, but never expected to start his travels so soon. Moreover, he hadn't seen his dad in ages, and thought what fun it would be to sail on his ship.

On arriving home he found his mother almost ready. The packing was nearly done, and she told him that they would be leaving first thing in the morning. They were to take a train to the seaport town further north from which the boat sailed. It seemed a very long ride, for the pair were impatient to see Jack's father.

They hadn't been on board many minutes, however, when he came swinging along.

"Found you at last!" he cried, embracing them both. "My! Mother! I wish you looked as well as Jack does. But we'll see what the North will do for you."

He gazed with pride on the boy, who was a sturdy lad, brimming over with health and vigor, and brown as a berry. Then he made them comfortable in deck chairs, tucking a steamer rug around his wife with the professional skill of a



seaman. Having many duties to perform, he was obliged to leave his family for the time being, but promised to return as soon as possible.

Pleasant as it was on deck, Jack couldn't sit still very long, and before supper time he had investigated almost every nook, corner and cranny of the great vessel. That night he confided to his dad that he was going to be a sailor.

"It's a fine life, my lad," his father replied, "but what will Mother do with both of us at sea? Besides, I thought you were going to be a fireman!" he added, covering a smile.

"I was, but I've changed my mind," the boy answered in perfect seriousness.

It was a delightful voyage and ended only too soon. The father put them on the train, and in saying good-bye promised to come and pay them a visit as soon as he could get leave.

Looking out of the window Jack discovered a new country. Passing through woods of maple, pine, spruce, and silver birch, with here and there a little inland lake, the train continued its upward climb. Soon a range of mountains loomed into view. Jack gazed breathlessly at their awe-inspiring height.

Presently the train pulled up at their destination. Catching up their suit cases the two hurried down the steps. There, on the platform, were Uncle John and his big boy, Frank.

"Well, Esther, it certainly is good to see you,"

he exclaimed, "and don't try to tell me that's Jack! Why, he was only knee-high to a grasshopper when I last set eyes on him! You and Frank are going to have great times together," he added, turning to the boy. He then bundled them into the buggy and drove off.

A pleasant ride through the woods soon brought them to the farm, and Aunt Nellie came out to welcome them. The travellers were a little tired after the long journey, but their strength was soon renewed by the ample helpings of tender roast chicken, the hot biscuits and honey, together with the steaming tea that Aunt Nellie pressed upon them.

An exploring Grey Squirrel

Chapter XII

VISITING THE LOG CABIN

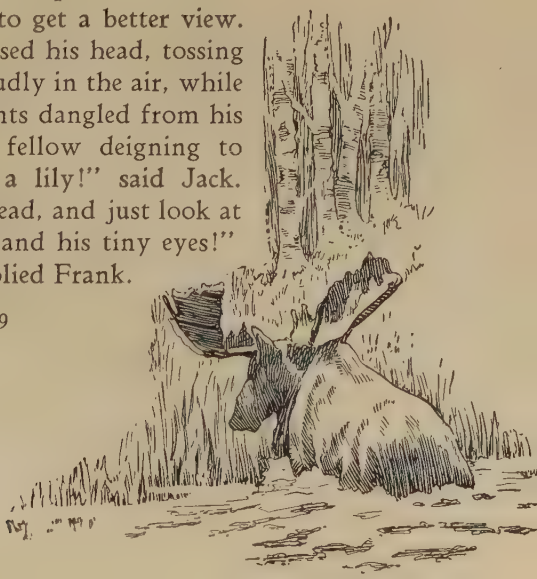
"The world turns softly,
Not to spill its lakes and rivers.
The water is held in its arms,
And the sky is held in the water.
What is water,
That pours silver
And can hold the sky?

HILDA CONKLING.

IT WAS not long before Jack and his cousin were great chums. They often went out in the canoe together, and one day, as they were paddling through a lonely lagoon, Jack suddenly turned his head and said in a low voice, "What is that creature over there?" Frank looked in the direction he indicated and saw a peculiar animal standing knee-deep in a marsh. His head was bent down and only the tips of his spreading antlers appeared above the surface of the swamp.

They paddled nearer to get a better view. Suddenly the creature raised his head, tossing his enormous antlers proudly in the air, while a mouthful of water plants dangled from his jaws. "Fancy that big fellow deigning to nibble at the stems of a lily!" said Jack. "What an odd-looking head, and just look at his funny humped nose and his tiny eyes!"

"That's a moose," replied Frank.



"He certainly is a strange animal. Father says that he is a relic of some remote period, surviving till the present time. Do you notice that odd suspension like a cow bell hanging from his neck?"

At that moment the animal caught their scent, stumbled up out of the marsh, and silently disappeared into the thick underbrush that fringed the edge of the lake.

The boys were thrilled at the sight, and quietly made a landing in order to examine the animal's track. They found it was more broadly spread than that of a deer, being also much larger and more pointed. The dew claws had left a distinct mark in the soft mud. Following his trail into the woods, Jack and his cousin were impressed with the unusual length of the creature's stride. They stopped at intervals to listen, but could hear no sound of breaking twigs or shuffling leaves as the moose made his retreat.

The lads returned to the canoe, and presently Frank said: "Old Mr. Northmoor lives just across the Lake. I vote we paddle over and see if he is at home."

"Who is Mr. Northmoor?" inquired Jack.

"Never mind," said Frank mysteriously, "you'll like him all right."

It was nearing noon when they reached the shore and drew the canoe up on to the beach.

"I guess he must be away," said Frank, looking around disappointedly.

Just at that moment a welcoming voice rang through the woods, and the old man appeared.

"Well, I certainly am glad to see you," he cried, warmly shaking Frank's hand. "And who may this young gentleman be?"

"This is my cousin, Jack. His home is in the South, but he and his mother are staying with us for a while."

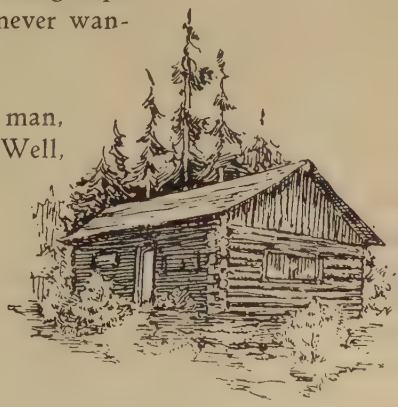
"Come on in, boys!" said Mr. Northmoor, leading the way to the cabin. At the door they were met by a large airedale. The dog at first eyed Jack suspiciously, but after satisfying himself that the boy was no intruder, displayed a more friendly attitude.

Despite the rough exterior of the cabin, it was cosy and attractive within. Jack saw a number of curios from other lands around the room, while the walls were adorned with trophies of the chase —an elephant's tusk, a leopard's skin, the antlers of an elk, and the massive horns of a mountain sheep.

"Yes," said the woodsman, as he caught Jack's eye roaming around the room, "I used to be a hunter, and have wandered to the ends of the earth in search of adventure. But something happened one day that made me resolve never wantonly to kill a wild creature again."

"What was it?" asked Jack eagerly.

"It's a long story," replied the old man, "and maybe I'll tell you some day. Well,



I bet you boys are hungry," he added in a brighter tone, "but I guess I can fix that all right."

After lunch they wandered through the woods. The trees had begun to turn; the leaves of the sumach were crimson, and the maples a riot of color. Grey squirrels played among the branches and chattered at a scolding jay. "Chickadee! Chickadee!" rang out from a nearby bush. In an instant Jack was back in Camp. where so recently he had heard that same cheerful little note.

"Doesn't he go South with the other birds?" he asked.

"No," replied Mr. Northmoor, "he stays right here to cheer us up through the long winter months."

Just then a grey squirrel that had been foraging among the fallen leaves uncovered a nut and hurried away with his prize. A moment later he was back again looking for more.

"I wonder where he buried his last find," said Jack.

"That's his secret," replied the woodsman. "This is the little fellow's busiest time, for now the nuts are ripe and ready for harvesting. He stores them away in crevices in rocks, holes in trees, and the little safety deposit boxes that he digs in the ground. Then, when winter comes, he scratches away the snow with unerring precision from the spot where his hoard lies hidden. Here a choice chestnut and there a few seeds. Probably

many a young oak sprouting up in the spring comes from some acorn that an industrious little squirrel buried, but failed to dig up again.

"You might think, Jack, that every squirrel feels free to roam all over the woods, but as a matter of fact, when food is abundant, each little fellow keeps within a radius of about fifty feet from his own tree. As every family thus has its own range, trespassing is strictly prohibited, and some of the battles and scamperings that we see are the result of unwarranted invasion on the part of some ignorant offspring who does not yet realize the property rights or perhaps because some bold intruder has paid an unwelcome call."

Meanwhile Jack had been mentally comparing this grey fellow with the fox squirrels he had seen around camp. These were more lively, he thought and much smaller.

"I wish squirrels would leave birds' eggs alone," he remarked.

"Well, the grey chap isn't nearly so bad as the red," Mr. Northmoor replied. "That rascal is a regular robber, but the woods would be lonely without him!"

Presently they came to a patch of brambles. "Ah!" exclaimed Mr. Nothmoor, picking off a tuft of fur from a thorny stem, "Bruin has been prying around here."

They traced the bear's progress as he had passed from bush to bush. Then some trampled-

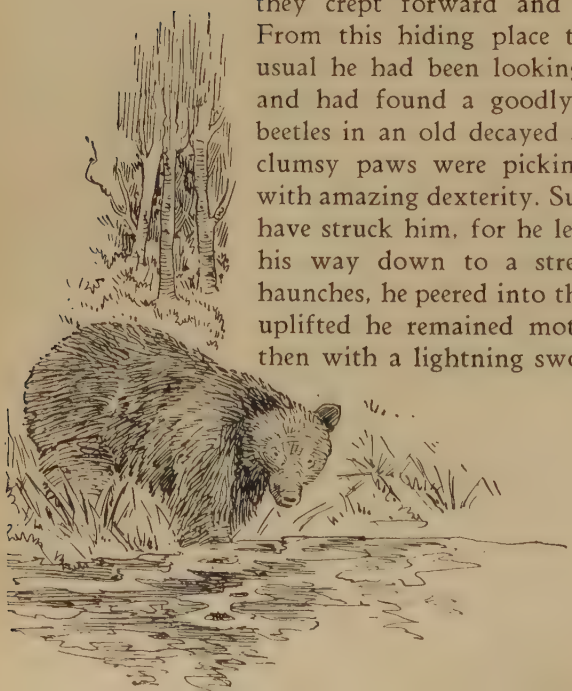
down grass showed that he had ambled across a clearing. Jack could even make out the shape of his big flat feet. At some rocks they lost the trail, but the old woodsman, after looking around, pointed to the trodden grass ahead. Jack remarked that the trail was lighter than its surroundings.

"Yes," said the aforetime hunter, "that shows he was going away from us. Had he been coming towards us the trail would have appeared darker than its surroundings."

Further on a few overturned logs, with the damp earth still clinging to them, showed that Bruin could not be so very far away.

"There's a good wind today," said Mr. Northmoor, "and it's blowing in our direction."

Seeking whatever cover presented itself, they advanced cautiously. Then, dropping on all fours, they crept forward and reached a large rock. From this hiding place they saw the bear. As usual he had been looking for something to eat and had found a goodly supply of grubs and beetles in an old decayed stump. His seemingly clumsy paws were picking out the tiny insects with amazing dexterity. Suddenly a thought must have struck him, for he left the stump and made his way down to a stream. Squatting on his haunches, he peered into the water. With one paw uplifted he remained motionless for a moment, then with a lightning swoop the paw descended,



and a fine trout was flopping on the bank. In a second Bruin was upon it, and swallowed the morsel with evident relish.

Looking up suddenly the bear saw them standing on the hill above.

"Keep very still," whispered Mr. Northmoor, "he has poor eyesight, and perhaps will not be able to tell us from the tree-stumps that are around."

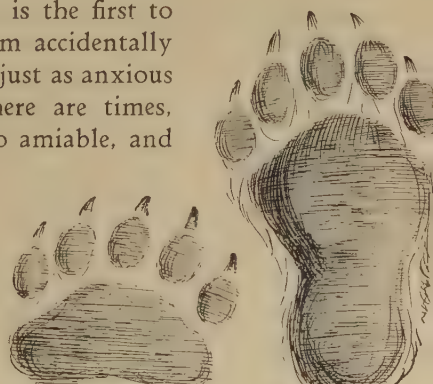
But apparently Bruin was not so deceived, for he quickly vanished into the woods, making as little sound as a rabbit.

"Well, that's the first bear I've ever seen," said Jack. "I would like to go down and examine his tracks."

"Come on, then," replied Frank.

So away they went, and found Bruin's trail in the damp soil leading to the water. The mark of the hind feet reminded Jack a little of the prints of the barefoot fishermen in the sands on the Isle of Palms.

"He didn't look very dangerous," remarked Jack. "No," said Mr. Northmoor. "All he asks is to be left alone. In fact, his sense of smell is so acute and his hearing so keen that he usually knows when you are around, and is the first to go away. But if you ever meet him accidentally he is as much surprised as you and just as anxious to avoid any unpleasantness. There are times, however, when his mood is not so amiable, and



Black Bear tracks, ¼ life size

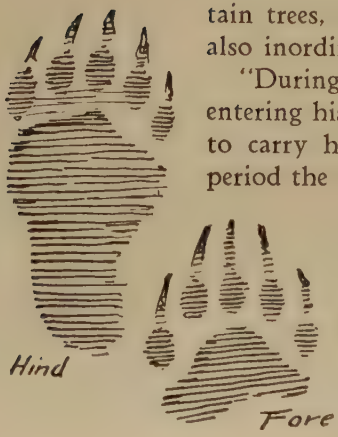
then Bruin is best left alone; and should you ever meet a mother bear accompanied by cubs I'd advise you to retreat as quietly as possible."

"Did you ever see a Grizzly?" Jack inquired.

"Yes," said the woodsman. "In my hunting days I have followed the Grizzly's trail many a time. And a fine chase he has often led me! Of all our animals I think he is the most sagacious. Even the wolf cannot compare with him in cunning. I am sure the old fellow knows that he can be followed by his tracks as well as by his scent, for he will purposely confuse them by walking to and fro over them. Leaping from the maze into the bushes, he will make off in some other direction. Occasionally he will take advantage of a stream and wade up it quite a distance, realizing that the scent is lost in the water.

"The Grizzly has a voracious appetite and spends most of his time looking for food. He even deigns to dine on grasshoppers, and seems to take a keen delight in chasing these lively insects, swatting them with his huge padded paw. His inclusive diet covers everything that is edible —mice, fruit, the bark and smaller limbs of certain trees, ants, snakes and rabbits; while he is also inordinately fond of honey, plus the bees!

"During cold weather he hibernates. Before entering his selected den he stores up layers of fat to carry him through the winter. During this period the young are born, and the little cubs are



Grizzly tracks, 1/6 life size

surprisingly small for the offspring of so big a mother. In fact, they are about the size of a chipmunk, but before leaving their den have become almost as large as a cottontail rabbit. The cubs soon learn to play together, and grow up to be champion boxers.

"Years ago, while the Black Bear was common throughout the forests of North America, the Grizzly seems to have been confined to the mountains, where he was the undisputed monarch, fearing none. The Indians, having only crude weapons, considered it an act of great courage to slay a Grizzly, and wore the claws as a trophy. But since the White Man with his deadly gun has so ruthlessly hunted him, even the Grizzly has become timid, and will flee at the least unusual sound.

"The chief characteristic of the Grizzly's track is the mark of the extremely long claws of the fore feet, which he uses for digging. They are well shaped for this purpose, being long, slender, and curved at the tips. With the Black Bear, however, the claws are much shorter and more curved. The two creatures are pretty good friends as a rule, but sometimes if one of them indulges in a little petty larceny or presumes unduly on the other's domain a chase will follow. On these rare occasions the black bear will skin up a tree to get away from the big Grizzly."

By this time Jack realized that the woodsman

was no ordinary person. He was well educated, widely travelled, and possessed a large fund of knowledge.

"I guess he never gets lonely," the lad said to himself, "being so well acquainted with all the wild folk."

They were now nearing the cabin, and the airedale, who had been left in charge, ran up to welcome them.

"Come in, boys," invited the old man.

"Thank you, Mr. Northmoor," Frank replied, "but I think we had better be getting home. It is quite a long paddle from here to the farm."

"Then you must come back again soon," said the woodsman, "and the next time ask your parents to let you stay all night. I can easily put you up."

Thanking him for his kindness, they got into the canoe and pushed off.

"Isn't Mr. Northmoor great!" said Jack enthusiastically.

"I knew you would like him," replied Frank. "We will go and see him again soon."

Singing a boat song and keeping time to it with their paddles, the boys made good headway.

"Row, brother, row, the stream runs fast,"

rang out Frank's clear tenor voice.

"The rapids are near and the daylight's past,"

came Jack's response.

"Soon as the woods on shore look dim
We'll sing to Heaven our parting hymn,"

blended the youthful voices; ending with the refrain:

"Row, brother, row, the stream runs fast,
The rapids are near, and the daylight's past."

Suddenly Frank stopped singing.

"Listen," he said.

"Whip-poor-will! Whip-poor-will!" sounded clearly in the quiet dusk. Presently the moon crept out from behind a mountain. All was quiet now save for the gentle plashing of the paddles, plied in rhythmic motion.

By the time they reached the shore the moon was high in the heavens, shedding its gentle radiance over land and river.

"What a glorious night!" whispered Jack, as though afraid to break the pervading spell.

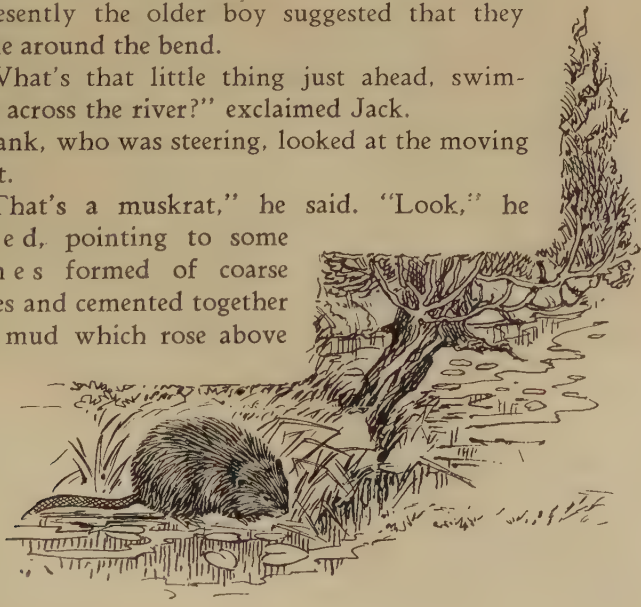
Frank made no reply.

Presently the older boy suggested that they paddle around the bend.

"What's that little thing just ahead, swimming across the river?" exclaimed Jack.

Frank, who was steering, looked at the moving object.

"That's a muskrat," he said. "Look," he added, pointing to some domes formed of coarse grasses and cemented together with mud which rose above



the water. "That's where they live."

"However do they get inside?" inquired Jack.

"They come and go below the surface. I think it's a pretty snug home for a water baby, don't you?"

Then another muskrat appeared and joined the first one. They swam about together in the river, using their long tails as rudders, but kept constantly on the lookout for any untimely visit from a predatory owl. Looking farther up the creek the boys saw other houses.

"This must be a regular muskrat village!" Jack remarked.

On reaching home they found Jack's mother beginning to worry, although her brother had assured her that the boys were all right.

"Frank is a regular Indian in the woods," Uncle John had told her. "He simply couldn't get lost!"

Muskrat track, life size

Chapter XIII

RIP MEETS A SKUNK

"I'm going out to fetch the little calf
That's standing by the mother. It's so young,
It totters when she licks it with her tongue.
I shan't be gone long.—You come too."

ROBERT FROST.

JACK was greatly interested in the life of the farm, and was already wondering if he had not been a little hasty in telling his father that he wanted to be a sailor. He liked the bustle and activity of the farmyard, and found constant entertainment in the crowing of the cocks. The ducks, he thought, quacked a little too loudly, but the pond was further away. He wanted to dig, weed and hoe all at once, and longed to drive old Dobbin at the plough.

One of his duties was to search for the eggs that errant hens had laid away from the nest. Another task was to bring in the cows at milking time. Rip accompanied him on these occasions, and, in fact, did most of the work. By this time Jack and the collie had become great friends. Rip felt that they had much in common, for both boy and dog were never so happy as when on the trail of some wild creature. Rip kept his nose to the ground, while his young master made good use of his eyes. Many a partridge and pheasant

would the collie flush, while now and then a rabbit led him an exciting chase.

But even Rip got worsted at times. One day the two were walking along a country lane when Jack saw a strange creature coming slowly towards him. Apparently the latter was quite unafraid. Jack could see that his dark fur was striped with white, and that he held his tail up a little. Evidently the animal sighted them, and, to Jack's amazement, came on quite unconcernedly. In fact, the superb confidence of the small creature was really comical. To Rip, however, this audacity was positively irritating, and he barked furiously at the impudent intruder. Instantly the little animal raised his bushy tail, at the same time imperiously stamping his forefeet on the ground. Rip considered this mere bluffing, and made a savage dash at the offender. The animal turned about, and the next moment poor Rip was rolling on the ground pawing at his eyes, as though in agony.

Just then Uncle John appeared on the scene. He had been doing some fall ploughing and was on his way home. Seeing what had happened, he came over.

"Oh, you foolish dog!" he admonished, "don't you know enough to leave a skunk alone?"

For the next few days Jack assiduously avoided any friendly advances on the part of his

canine friend. In fact, though usually such a favorite, Rip, for the time being, was socially ostracized.

Knowing that the experience of the afternoon had given Jack a poor opinion of the skunk, Uncle John sought to modify it. He told the lad that the farmer found the skunk an excellent ally, as the animal fed mostly upon rodents that were so injurious to the crops and also devoured huge quantities of grasshoppers, beetles, crickets and other insects.

"But," he added, "the rascal sometimes steals chickens!"

In the excitement of the encounter Jack had not noticed the skunk's track. Next morning he went to look for it and found that the creature was a sole-walker, and that where he had finally galloped off, the claws of the forefeet showed in the track, but that no claws appeared in the print of the hind feet.

The Red-Winged Blackbird nest cleverly lashed to upright reeds

Chapter XIV

UP THE WINDING RIVER

"The burning maples are near;
The pine is a sound like a tear;
. . . . . .
The mists are cold on the low ponds
And the frost is chill;
But the world is warm with crimson and bronze
Where the oaks stand on the hill."

WILSON MACDONALD.

A FEW MILES from the farm the boys came one day upon a stream winding its way slowly through the woods.

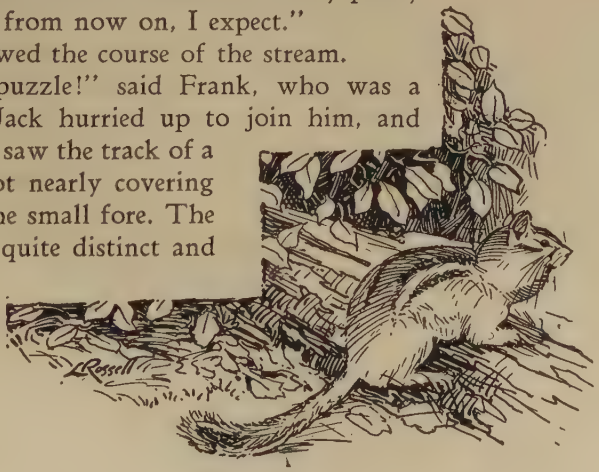
"Let's explore this!" said Jack.

Just then they heard a throaty "Chuck! Chuck!" and turning round saw a little chipmunk sitting upright on a log. Catching sight of them, he scampered down and disappeared beneath it.

"That must be the front door to his home," said Frank. "I'll bet he has a nice little hoard laid by in there for the winter. He'll stay pretty much indoors from now on, I expect."

They followed the course of the stream.

"Here's a puzzle!" said Frank, who was a little ahead. Jack hurried up to join him, and looking down saw the track of a large hind foot nearly covering the print of the small fore. The tail drag was quite distinct and



made a decided groove in the soft mud where the animal had entered the water. From the slow gait it was quite apparent that the creature was less at home on land than in water.

"That couldn't be anything but a muskrat," said Frank. "And look here," he continued, pointing to another trail close by, "a mink made this. He must have been after the muskrat."

"Tomorrow I'll come back and make a plaster cast of the muskrat track," said Jack. "It's much too good to miss."

The fascination of the river, twisting in and out among the trees, held the boys captive to its constant vagaries. The glory of the woods was mirrored in its depths. Slender birches on the bank leaned over a little, as though to see their silver stems reflected in the water. Hemlocks, in their sombre green, formed a fitting background for the gaiety displayed by maples, arrayed in autumn vesture of scarlet, crimson, gold.

Just then a flock of geese flew honking overhead, following their leader in V-shaped formation.

"Perhaps they'll pass the Isle of Palms," thought Jack. "I wonder if Harold will see them."

Soon the boys came to a cedar swamp. Ploughing through this, they reached higher ground, and suddenly Jack said, "Someone has been chopping down trees." Frank stopped, picked up sev-

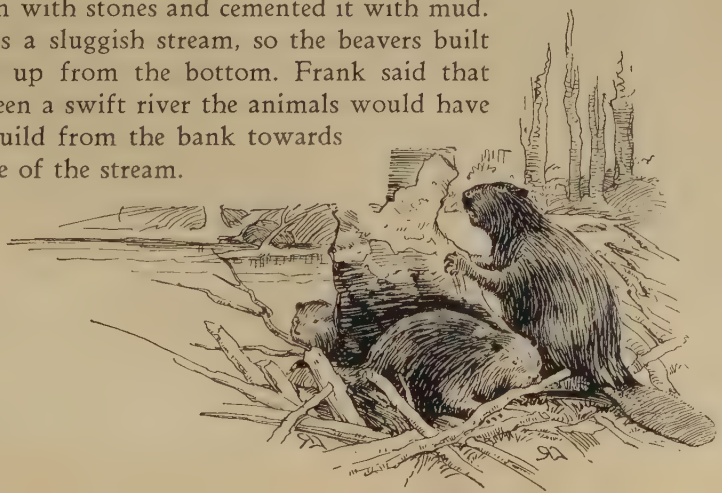
eral chips that were lying near a stump, and examined them closely.

"These are thick and curved," he remarked, "and were cut by no woodsman's axe. They are the work of beaver. With their chisel-shaped teeth a pair of beavers can soon fell a good-sized tree."

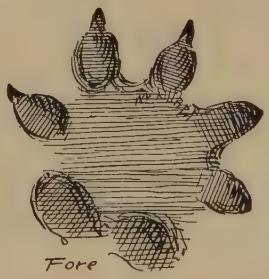
A little further up they found a clear track. There was no mistaking the pigeon-toed trail of the corpulent creature, with the tail mark appearing on either side. "Couldn't we come back after dark and watch them at work?" inquired Jack.

"Why not?" Frank replied. "We could soon get here by paddling across the lake."

So that night the cousins returned to the same spot and hid behind a ridge. There was a full moon and the breeze favored them. Soon they heard a splash at the other side of the stream, and a beaver came swimming along with a log in his mouth. He pushed his way energetically towards the dam, and the water, placid before, was now covered with ripples. Nearing the scene of activity the animal dived, carrying the log to the bottom. Other beavers, plasterers, weighed the log down with stones and cemented it with mud. This was a sluggish stream, so the beavers built the dam up from the bottom. Frank said that had it been a swift river the animals would have had to build from the bank towards the centre of the stream.



The boys were so engrossed in watching the industrious workers that they forgot to be careful and leaned too far over the ridge. A sounding slap on the water and immediately every beaver disappeared. "One of them saw us," said Frank. "That flip of his tail was the danger signal. We might just as well go home, for they probably won't come back again tonight, as long as we remain here."



Beaver track, one-half life size

Chapter XV

A WAYWARD WOODCHUCK

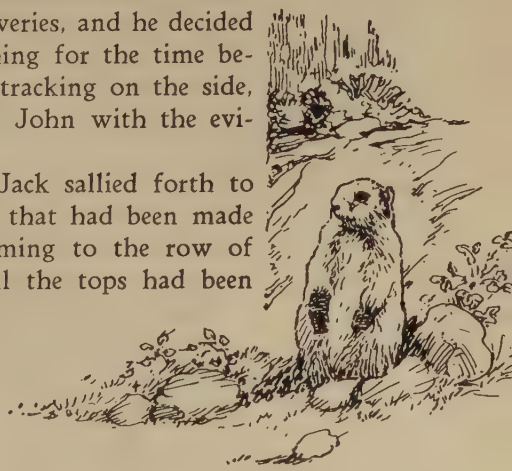
"Sweet is the breath of morn, her rising sweet
With charm of earliest birds; pleasant the sun
When first on this delightful land he spreads
His orient beams, on herb, tree, fruit and flower,
Glistering with dew; fragrant the fertile earth
After soft showers."

MILTON.

ELL, someone's awfully fond of cauliflower," declared Uncle John one day, coming into the kitchen while his wife was preparing dinner. "I had hoped to bring in a lovely head from the garden, Nell, but a four-footed thief has beaten me to it. I'll have to put Rip on his scent when he's through with the rats around the barn."

It had been a rainy morning, and Jack was hovering around the kitchen attracted by the delicious aroma arising from the oven. It smelt just like jam tarts! But his uncle's remark aroused him from these epicurean reveries, and he decided then and there to say nothing for the time being, but to do some quiet tracking on the side, and later to surprise Uncle John with the evidence of his skill.

So early next morning Jack sallied forth to investigate the depredations that had been made in the kitchen garden. Coming to the row of cauliflower, he saw that all the tops had been



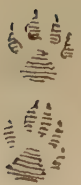
bitten off. The culprit, evidently satisfied, had then made for the fence, and the slow gait of his trail showed that he had been in no hurry to leave after this excellent meal.

Behind the currant bushes was a hole where he had dug under the fence, emerging into a field on the other side. Here the tracks ceased.

The sun was still low in the sky and its rays had not as yet drunk up the dew, which lay sparkling like countless diamonds on the blades of grass. Jack climbed the fence and began casting around in a circle. When he reached a point where the sun was behind him, he noticed a line darker than the surrounding dewy grass, which marked the direction that the invader had gone, brushing off the drops as he went. Following this, Jack continued up the hill and across an unused rocky field. There was something at the further end. "Whatever is it?" he wondered. He advanced a step or two, and then beheld a fat, hairy creature sitting upright on its hind feet, evidently surveying the landscape. The animal remained motionless for a second or two, satisfied his curiosity concerning Jack, then disappeared quickly into a burrow.

The boy went over and examined the hole. He noticed a few tracks in the soft earth. They somewhat resembled a squirrel's footprints, but were much larger.

Feeling rather elated at his discovery, Jack



returned home, and when the family was assembled at breakfast told what he had seen.

"A woodchuck!" exclaimed his uncle. "I thought as much. Well, I suppose the rascal has to put on extra weight before taking his long winter nap. He'll soon be turning in now, and won't bother us much more, so I guess we'll let him off this time."

"Pretty good tracking, Jack!" he added. "I think we'd better keep the lad here on the farm, eh, mother?" he continued, smiling.

A Groundhog came out in the cold sunshine of early spring, and went dragging his feet through the snow

Mule Deer, Sequoia National Park

Black Bear, Sequoia National Park

Chapter XVI

MOUNTAIN TRAILS

"We climbed with him the wandering trail
Up to the last keen lonely height—
Where snow-peaks clustered, sharp and frail,
Swimming in light."

EUNICE TIETJENS.

THE DAYS were now growing shorter and Frank was kept very busy helping around the farm. Holes in fences required mending, tools and implements needed repairs, and a new chicken coop had to be built. Thus several weeks had elapsed since the boys had seen Mr. Northmoor; so, when Saturday came round, Frank asked his father if he might be spared to accompany Jack on another visit to the woodsman.

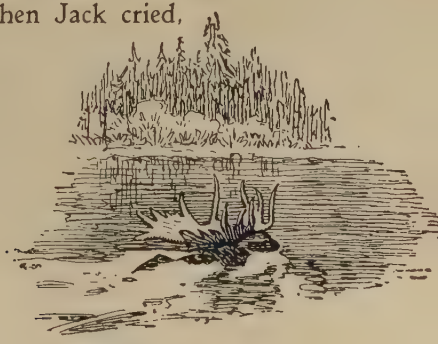
"Very well, Son," his father said. "I guess you've earned a holiday. Keep your eye on Jack and see that he doesn't get into any mischief, and if Mr. Northmoor asks you to stay overnight it will be quite all right."

"Thanks awfully, Dad," Frank replied, and ran off to find his cousin.

It was already afternoon; so, deciding to paddle across, the boys set off immediately. The edges of the water were fringed with ice.

"The lake will soon be frozen over," Frank remarked, as they pushed out from shore.

They hadn't gone very far when Jack cried,



"Look," nodding in the direction of an animal swimming across the lake.

"It's a moose," he added. "I remember his peculiar head and huge antlers."

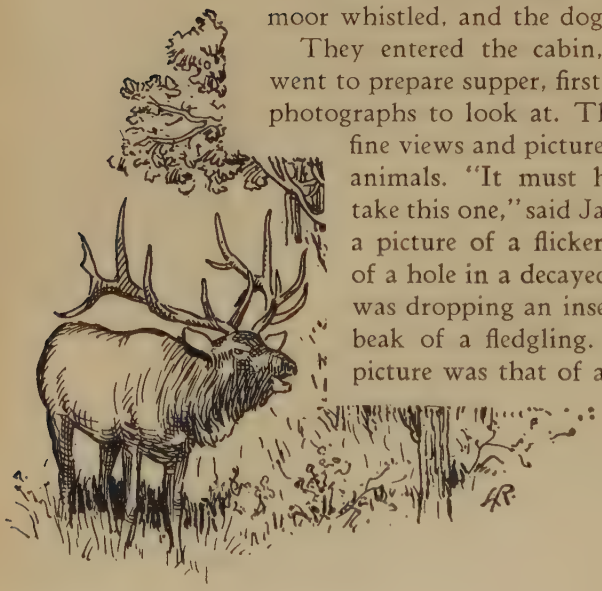
"Yes, those fellows often cross here," said Frank. "I have sometimes felt inclined to throw a rope over their horns and make them tow me along, but then again it might upset the boat!"

When they came in sight of the cabin the sun was sinking behind the hills. The woodsman saw them in the distance.

"I have been expecting you boys for some time," he said, as Frank steered the boat up to the wharf.

"I see you have your camera with you, Jack," he added, as the boys landed. "Photography is one of my favorite hobbies."

"Where's Pal?" inquired Frank. Mr. Northmoor whistled, and the dog came bounding up.



They entered the cabin, and the woodsman went to prepare supper, first giving the boys some photographs to look at. These consisted of very fine views and pictures of various birds and animals. "It must have been difficult to take this one," said Jack, showing his cousin a picture of a flicker perched on the edge of a hole in a decayed tree trunk. The bird was dropping an insect into the wide open beak of a fledgling. Another interesting picture was that of a kingfisher in mid-air

carrying a glistening minnow in its beak.

"These are exceptionally good photographs," admired Frank.

"Yes," Mr. Northmoor replied, coming in from the kitchen, "I have had more fun with my camera than almost anything else. In fact, I am much prouder of these pictures than I am of those antlers on the wall!"

After supper the three drew up around the log fire.

"Won't you tell us about some of your adventures?" pleaded Frank. Once begun, the former hunter held them spellbound. He told of savage encounters with beasts of the jungle, and related many thrilling adventures in far away lands.

At the close of one of these stories Jack asked Mr. Northmoor if he had ever seen an elk.

"Yes," replied the woodsman. "Once in the Rocky Mountains I suddenly came upon one of these splendid creatures. He was a beautiful sight, silhouetted against the sky, tossing his proud head, crowned with wide-spread antlers. Years ago he ranged over the whole North American continent, except the extreme North. But when the White Man came the herds retreated to the mountains. Here they managed to make a stand among the foothills, travelling up the mountain sides in summer. But in the season of deep snows they were forced to lower levels in search of food.

Thus they were brought in contact with the wolves, which were a constant menace to their young."

"Is the elk a fighter?" inquired Jack.

"As a rule he is a peaceful creature," replied the woodsman, "but when his anger is aroused there is not a more dangerous animal to be found. The stags fight desperately for the leadership of the herd, and occasionally one of the combatants is killed.

"Once in the snow I read the story of how an antlered monarch won a bloody battle against half a dozen hungry wolves. The ravenous creatures had picked up the scent of the quarry, who, hampered by the deep snow, had been forced to make a stand for his life. With his sharp-pointed, cup-shaped hoofs the elk can strike with all the force of a sledge hammer, and one blow on a vital spot would kill a wolf instantly. Such an attack, followed by a furious onslaught of his mighty antlers, might well bring terror to the hearts of the most courageous foes. That the wolves had fled after such a charge was evidenced by their retreating footprints in the snow, while blood marks on the trail told of the wounds they had received.

"A trifle to one side of the scene of the conflict lay the mangled remains of one of their number. An ugly gash in the head showed where the elk had felled him with a lightning stroke of his

hoof, while the body, gored almost beyond recognition, told how the angry creature had wreaked revenge upon his fallen foe."

By this time the fire had burnt low, so Mr. Northmoor went outside for more wood. On returning he remarked, "It's colder, and I believe we're going to have snow."

Just then they heard loud barking in the woods.

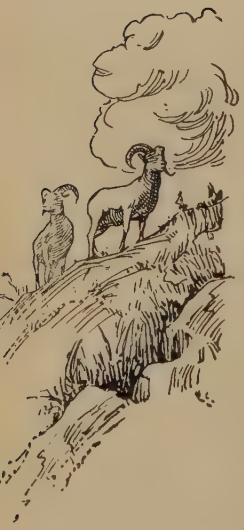
"That's Pal," said Mr. Northmoor. "It sounds as though he has treed a bob-cat. If the cat were not such a coward he might give the dog a good licking."

"Did you take this picture of the Mountain Sheep, Mr. Northmoor?" asked Frank.

"Yes," their host replied, "a friend and I together. It was a beautiful day, and I shall never forget the exhilaration we felt in the rarefied air of those mountains. Magnificent views greeted us at every turn. The glittering snow-clad peaks rose in stately grandeur high above us, while range after range of mighty hills rolled in the distance. But so intent were we upon our quest that we hardly realized the beauty of it all. There, in that remote fastness of the Rocky Mountains, we were trying to get a photograph of that peerless mountaineer, the Bighorn. It seemed an almost impossible task, but we felt that the sport would be well worth any risk.

"When we first saw the track we thought it

Mountain Sheep track, one-half life size



had been made by a deer, but on closer examination missed the slim, pointed toemarks of that graceful creature. Then, recognizing the square bluntness of this mark, we realized that it was the track of a Mountain Sheep.

"The trail appeared on the green slopes, so we followed higher and higher, until at last we reached the snow-clad peaks and precipitous glaciers—the real home of this dweller of the hills. An occasional glimpse in the distance, as he appeared on the edge of some projecting cliff, was the only reward so far of our untiring efforts.

"Then some fresh upturned soil suggested that he had found some roots among the rocks. Soon a faint hoof-mark and an overturned stone gave us another clue. We followed this circuitous path, hoping that around the curve we might surprise the elusive fellow. We had to step cautiously, for one false move would have landed us in the abyss below. Then we knew that this was our last chance of snapping the daring climber, for to attempt to pursue him into higher altitudes would have been sheer madness. His agility and sure-footedness could carry him up many a steep incline, where we might never hope to follow.

" 'Look!' said my friend presently in a low voice, for he had seen the Bighorn foraging in the snow. Crawling in feline fashion, we advanced stealthily, foot by foot, till the sudden bend brought him in full view. At the click of

the camera up went his head. One startled look and he was gone."

"Gee!" whispered Jack breathlessly. "I wish I had been there."

"Yes," said Mr. Northmoor, "it was a wonderful experience. And so encouraged were we by this success that a few days later we tried to take a picture of the Rocky Mountain goat.

"You can't imagine how high we had to climb to see that ghost-like creature, motionless on the ledge of an almost perpendicular cliff, with snow-clad mountains towering above. Like a spectre he seemed to haunt the solitary wastes. White from head to foot, he was scarcely discernible in the early morning mist. A nearer view dispelled the illusion, and the long solemn face of the Rocky Mountain goat, ponderously shaking his shaggy beard, suggested the wisdom of the ages, as though some old philosopher, weary of the world's frivolities, had retired to the silence of the hills. Whatever the thoughts of this hunch-backed greybeard may have been, he was daring and sure-footed to a degree, while a curious deliberation characterized his movements. In fact, he almost posed for his picture!

"Feeling immensely pleased with ourselves, we carefully descended the stony incline, leaving the hoary sage to ruminate alone amid the eternal hills."

A Red Squirrel found it hard going in the soft snow

Chapter XVII

NIGHT NOISES

"The night is chill, the forest bare
Is it the wind that moaneth bleak?"

BYRON.

HEN THE FIRE had burned low the woodsman showed the boys their bunks. No sooner was Frank's head on the pillow than he was sound asleep. Jack, however, lay awake, thinking of the many adventures Mr. Northmoor had recounted. But at last sleep overcame the lad, and then numerous wild creatures pursued him in his dreams. Things were a bit mixed up, though, for a lion chased him up and down a snow-clad peak, while a Rocky Mountain goat conversed with him calmly on the Isle of Palms!

There is no telling how long these strange experiences might have continued had not the night noises of the woods broken in upon his slumber.

Overhead there was a continual scampering to and fro, as though an army of squirrels were engaged in playful skirmish. Then something scratched at the door. Jack thought it must be a lynx and wondered if Pal were asleep. Presently a heavy pad, pad, sounded along the ground. Perhaps the black bear had come to take a look at them! Jack ducked his head beneath the quilt and was soon fast asleep again.

Hardly had the darkness disappeared than Jack was out of his bunk and looking around outside for signs of the night's prowlers. The ground had a light covering of snow, whereon was a regular network of tiny tracks.

"White-footed mice," he said to himself. "I remember these little fellows around Camp Wapoose. They nearly drove the cook crazy. This trail has the same pairing of the forefeet and also the drag of the tail."

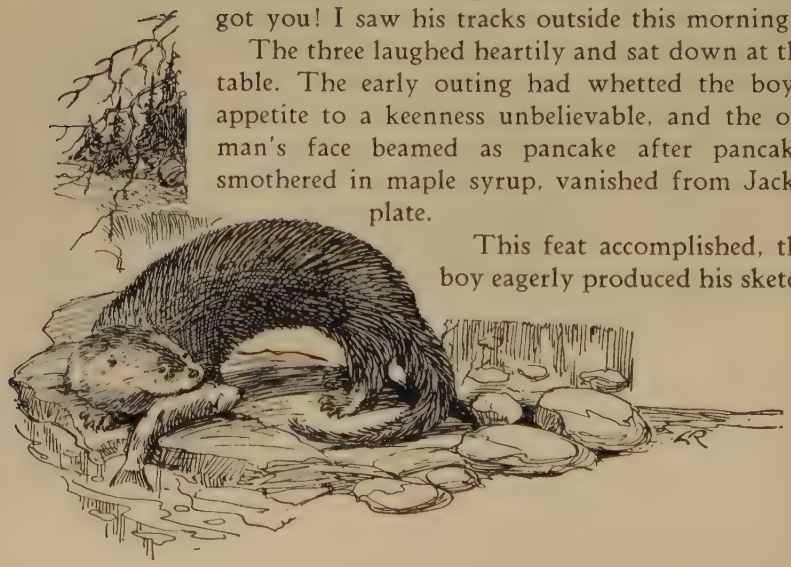
Walking down to the water's edge he found another track. It was round and showed five toe-marks and a decided tail drag. Jack dived into his pocket for pad and pencil, and made a quick sketch of it.

Then looking up he caught sight of a spiral of blue smoke rising from the log cabin.

"Breakfast!" he almost shouted aloud, and made a bee-line for the woodsman's home.

"Well, there you are, Jack!" exclaimed Mr. Northmoor. "I thought the old black bear had got you! I saw his tracks outside this morning."

The three laughed heartily and sat down at the table. The early outing had whetted the boy's appetite to a keenness unbelievable, and the old man's face beamed as pancake after pancake, smothered in maple syrup, vanished from Jack's plate.



This feat accomplished, the boy eagerly produced his sketch

of the track, and asked Mr. Northmoor to explain it.

"Why, that's an otter's track," the latter said. "You were lucky to find it. I see he had just emerged from the water; but if he proceeded across country to reach another stream you would probably find his trail in sets of fours."

"Are he and the beaver good friends?" inquired Jack.

"Gracious, no!" the man replied. "On the contrary, there appears to be a strange feud between them. Perhaps it is due to the fact that the beaver's engineering proclivities interfere with fishing, while the sportive splashing of a giddy otter, trespassing near a beaver dam in winter, may seriously imperil the frost-proof condition of the latter's submarine storehouse. If this were destroyed, the resulting blocade of ice would mean starvation for the beaver and his family. Thus the feud continues, and I once saw a beaver and an otter struggling in a death-like grip, with no sign of either yielding.

"But the otter is merry and carefree withal, although an incurable wanderer. As he is such an expert fisherman and loves to take a plunge, earning a living is a mere pastime to him. In fact, the older the otter grows, the fatter and more frolicsome he becomes.

"One moonlight night I watched him sliding down a clay bank, worn smooth by much usage. He tobogganed down, entered the water with a

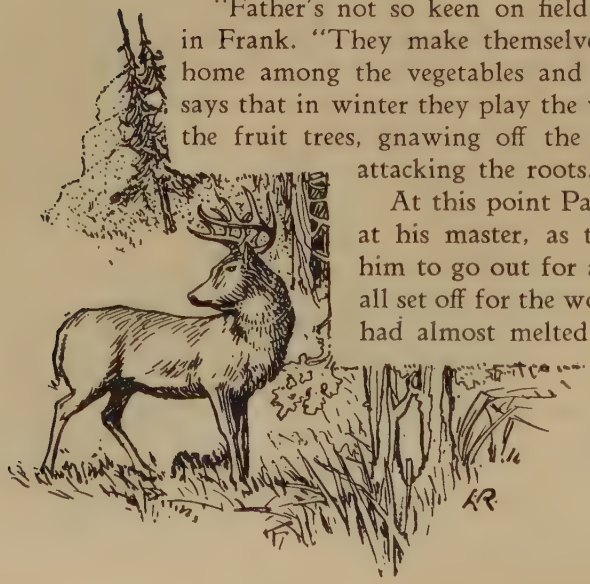
splash, then reappeared to take another plunge. After he had played long enough the sleek creature swam away without even making a ripple."

"I'd like to know the jolly otter," Frank remarked. "He sounds like a good sport."

"This morning I found tracks of white-footed mice," said Jack. "Do they ever come inside the cabin?"

"Sometimes they pay me a visit," Mr. Northmoor replied, "especially at this time of the year They hoard up seeds, nuts and grain to live on during the winter, and come to see what I have to offer. I think the graceful little creatures are very pretty, with their grey-fawn coats and snowy white forefeet. They are exceedingly playful, and sometimes before daybreak you can catch a glimpse of their frolicsome capers. The lively fellows are good climbers, too. I once knew one to make his winter home in a nest that a bird had abandoned."

"Father's not so keen on field mice," chimed in Frank. "They make themselves too much at home among the vegetables and grain. And he says that in winter they play the very deuce with the fruit trees, gnawing off the bark and even attacking the roots.



At this point Pal began to paw at his master, as though begging him to go out for a walk, so they all set off for the woods. The snow had almost melted and the recent

autumn rains had softened the fallen leaves. This made the going silent, and now and then through the branches a fleet-footed deer was seen. Once a stag stood alone in a clearing, and looked at them for a moment.

On coming to a grove of hemlocks, Jack noticed that the bark was stripped off in patches from some of the trees. He asked Mr. Northmoor how this had happened, and was told that a porcupine had been gnawing at it.

"I know those fellows," broke in Frank. "They sometimes come to our apple orchard and clean up all the windfalls. One day I saw Rip going to spring at one, but stopped him just in time. I didn't want the porcupine to make a pincushion out of him!"

At that moment a chipmunk darted past, with a mink close at his heels. The chipmunk hurried into the hollow of a tree, and the mink disappeared after him. But presently the mink came out, without his prey.

"Did the chipmunk get away?" asked Jack.

"That's pretty hard to tell," said Mr. Northmoor. "Let's hope he escaped by another exit. But the mink is mean enough to kill him just for the fun of it, and then leave him there. He is cousin to that arch-villain, the weasel, who scatters terrors wherever he goes.

"The weasel's ability to scale trees, leaping from branch to branch with the agility of a

squirrel, and the way he ferrets in the ground, make him a deadly foe to every bird and beast within his range. He has a perfect craze for killing birds and sucking their eggs. Molly Cottontail he finds an easy prey. In fact, his every step is marked with blood."

"Doesn't any animal ever get *him?*" asked Jack.

"The fox can catch him," Mr. Northmoor replied. "Owls swoop down on him, too; but in winter, when he wears his white fur coat, they often get fooled. They make a grab at the black tip of his tail, but fail to catch the speedy creature."

It was nearly noon when the party returned to the cabin. Mr. Northmoor went to inspect his White Leghorns and came back with half a dozen new-laid eggs.

"No, they're not for you, Pal," he said, as the dog sniffed at the basket. "We have company to-day, you know!"

After lunch Frank went to the window, and noticed that the sky was lowering.

"I believe it's going to snow again," he said. "I really think we ought to start for home."

Mr. Northmoor looked out, and agreed that perhaps it would be wise. So, when the boys were ready, Pal and his master accompanied them to the boat.

On left the Weasel leaves his den, on right returns with his prey

Where the White-footed Mouse met his fate. His trail comes into the picture from the lower right hand corner, and ends suddenly. Wing marks on the snow show where a Hawk or Owl picked him up.

Chapter XVIII

A MERRY CHRISTMAS

"Snowflakes come in fleets
Like ships over the sea."

HILDA CONKLING.

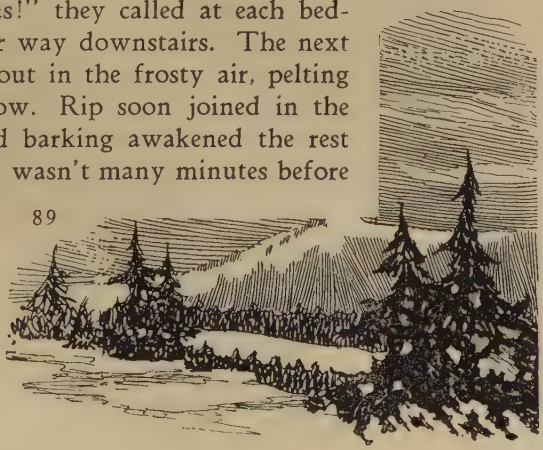
THE EARTH was covered with a blanket of white. Softly and silently during the night the flakes had fallen. The sun arose on a new world, its early rays catching the tree tops and turning the leafless branches a burnt umber. Soon the valley below was flooded with light.

Rubbing his eyes, Jack sat up in bed and wondered how ever Harold could lie there sleeping, on Christmas morning. This was indeed to be a happy day, for both his father and his chum had come up for the holidays. He jumped out of bed and went to the window. Then his shout of joy awoke Harold, who was beside him in a moment.

"I wonder how deep it is," said Harold.

"Well, slip on your clothes, and we'll soon find out," replied Jack.

"Merry Christmas!" they called at each bedroom door, on their way downstairs. The next moment they were out in the frosty air, pelting each other with snow. Rip soon joined in the fun, and his excited barking awakened the rest of the household. It wasn't many minutes before



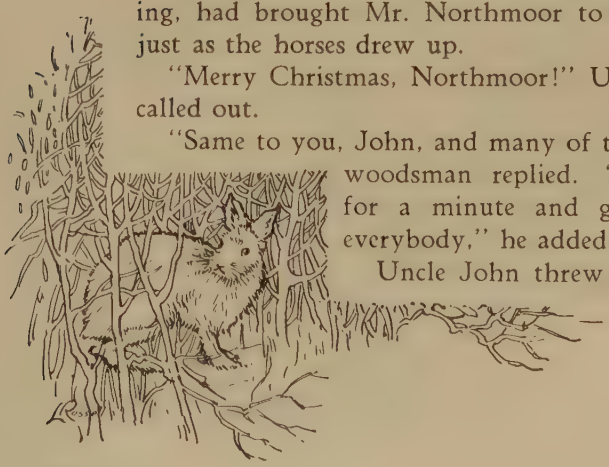
Jack's father appeared, and a well-aimed snowball landed right on his neck. Not knowing whether it came from Harold or Jack, he gave chase to them both.

When the three went indoors, the others were all up and breakfast was ready. In the centre of the table were scarlet poinsettias, and bunches of holly hung about the room. These were a present from Harold, who had brought them with him from the South.

Mr. Northmoor had been invited to spend Christmas with them, so after breakfast Uncle John, Harold and Jack drove off in the sleigh to call for him. The air was keen and bracing, and the boys' cheeks tingled as they sped along. The cedars and hemlocks were laden with snow, and Harold noticed a crossbill, perched on a pine tree, pecking away at a cone.

Emerging from the woods, they came in view of the lake, and soon sighted the cabin.

The jingling of the bells, and Pal's loud barking, had brought Mr. Northmoor to the door, just as the horses drew up.



"Merry Christmas, Northmoor!" Uncle John called out.

"Same to you, John, and many of them," the woodsman replied. "Come in for a minute and get warm, everybody," he added.

Uncle John threw a blanket

over the steaming horses, and followed the boys into the cabin. Toasting their toes at the fire, they all enjoyed the liberal refreshment that the thoughtful man had ready.

Soon the whole party, Pal included, drove off toward the farm. They had not gone far when, almost at the horses' feet, a ruffed grouse rose and whirred away. It had ploughed beneath the snow for warmth, and just escaped being run over. "That fellow has on his winter shoes," said Mr. Northmoor, gazing after the bird. The boys looked puzzled, so he told them that in winter Nature provided the grouse with a hairy growth around his toes, to keep him up on the snow.

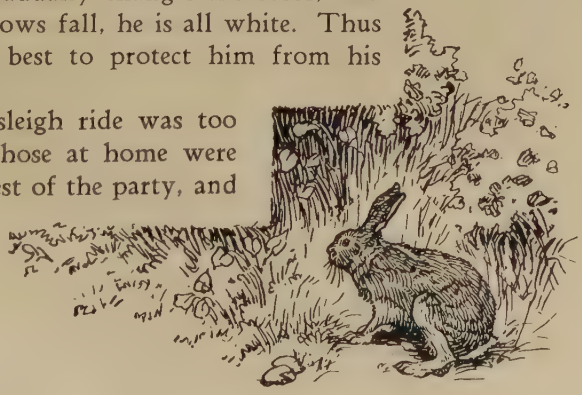
At that moment, a ball of white bounded across the road.

"Was that a rabbit?" asked Harold.

"Yes, it was a Snowshoe," said Uncle John. "He has a heavy coat of hair covering his hind feet in winter, and so his track in the snow is as large as that of the Jack Rabbit, though the latter is twice his size.

"In the summer he is brown, but as winter approaches, he gradually changes his color, and when the deep snows fall, he is all white. Thus Nature does her best to protect him from his many enemies."

The glorious sleigh ride was too soon over; but those at home were looking for the rest of the party, and



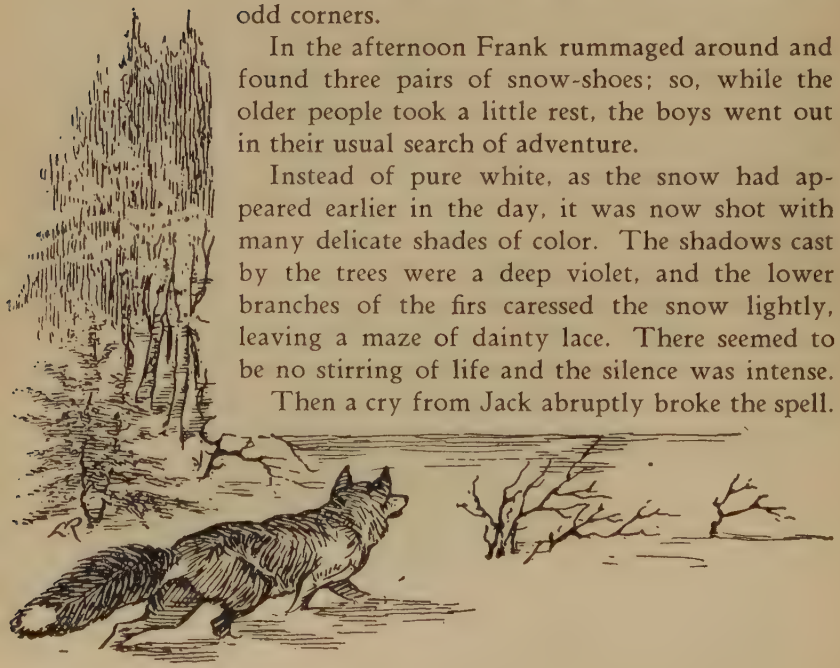
Mr. Northmoor was given a hearty welcome. Jack's father and the woodsman became quite chummy right away. Each was interested in the experiences of the other, and both loved the sea.

It was a happy group that gathered round the dinner table, and a royal feast, indeed, that was set before them. Turkey roasted to a T, with chestnut stuffing and cranberry sauce, soft June peas and sweet potatoes. Luckily the long ride in the frosty air had made the boys even hungrier than usual, or they might have been stalled after the first course. Then what would have been more tragic than to see and smell delicious mince pie, but be unable to demonstrate one's appreciation? Suffice it to say, however, that ample justice was done to the dessert also, and that a few nuts and raisins, too, were tucked away in odd corners.

In the afternoon Frank rummaged around and found three pairs of snow-shoes; so, while the older people took a little rest, the boys went out in their usual search of adventure.

Instead of pure white, as the snow had appeared earlier in the day, it was now shot with many delicate shades of color. The shadows cast by the trees were a deep violet, and the lower branches of the firs caressed the snow lightly, leaving a maze of dainty lace. There seemed to be no stirring of life and the silence was intense.

Then a cry from Jack abruptly broke the spell.



He pointed out the tracks of a fox that had evidently been stalking in the vicinity. These appeared in a sheltered spot where the ground was was nearly bare. The tracks were sharp and clear and almost in a straight line. There was a certain aristocracy about them—slim, elegant, with the nail marks showing distinctly. It was impossible to mistake them for the round, clumsy tracks of a dog.

Close by were the tracks of a pheasant, almost obliterated by the wind. But apparently these were old and the scent gone, for Reynard had paid no attention to them.

Suddenly the trail vanished.

"Where did the crafty fellow go?" said Jack.

The boys searched around.

"Ah! Here he took a jump to one side," cried Frank. A little further on, the fox had changed his gait, probably after a short pause to catch some scent on the frosty air.

"I can just picture him," Frank said, "standing here, with quivering nose, and one paw uplifted."

Then the track showed how cautiously the fox had proceeded, with a slow and stealthy step, until, by deeper imprints in the snow, they could tell where he had made a sudden leap upon some hapless prey. A few drops of blood, and tiny tracks showed the tragic fate of a heedless field mouse. This, however, must have been but the

merest appetizer, for Reynard had resumed his quest.

Here and there a body mark on the snow, and the drag of his proud brush, showed how low he had crouched, as he slowly moved forward, seeking every bit of cover all the while. Hiding behind a snow-clad hillock, passing under a bush, but always proceeding in the same direction, the fox had continued to stalk. Again marks in the snow, where he had sprung, with his feet drawn up under him, together with the scattered feathers of a partridge, betokened his success. Then the trail turned, and the occasional drag beside his own track, showed that Reynard had taken his trophy home.

"Well, it's rather hard on the partridge," remarked Harold. "Still, I'm glad Reynard had a bird for dinner, too." The others laughed, and the trio continued their tramp.

It was the first time Jack and Harold had worn snow-shoes, but they got their feet tangled only occasionally, and soon learned to walk properly, passing the snow-shoes over each other, in a perfectly natural manner. It was wonderful, they thought, how these "queer-looking tennis rackets" kept them from sinking in the snow. They decided that the Indians were clever to have invented them.

"Wait till you try skis," laughed Frank. "You won't find them quite so easy at first, but they are much faster. Oh, Boy! What fun it is to go sliding down a mountain side, and jump from a ledge into a lower valley."

"It must make you feel like a bird!" said Harold, in an awed tone.

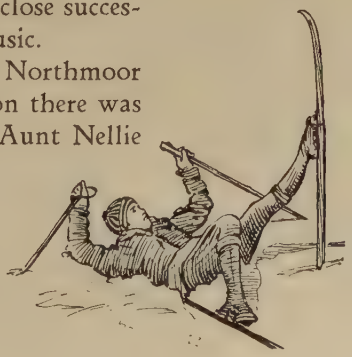
"Yes," replied Frank, "Sometimes you think you're a swallow. Then, all at once, you're a smash up!"

Jack rubbed his knees, nervously, but intended to beg his Dad for a pair of skis anyhow.

When the boys reached home it was supper time. How pretty the table looked, with the four tall red candles! Was that a Christmas cake right in the middle, with icing almost an inch high? And what kind of funny caps might not lie hidden in those scarlet bonbons by each plate! Jack wanted to pull his at once, but knew he would have to wait.

After supper, the whole family sat in a circle around the blazing log fire. How it crackled! And an aroma, as of incense, rose from the burning wood. Presently Uncle John's deep bass voice began to carol. One by one the others joined in, and song after song followed in such close succession that the walls re-echoed with music.

In the middle of the singing, Mr. Northmoor quietly slipped out of the room. Soon there was a loud knocking at the front door. Aunt Nellie

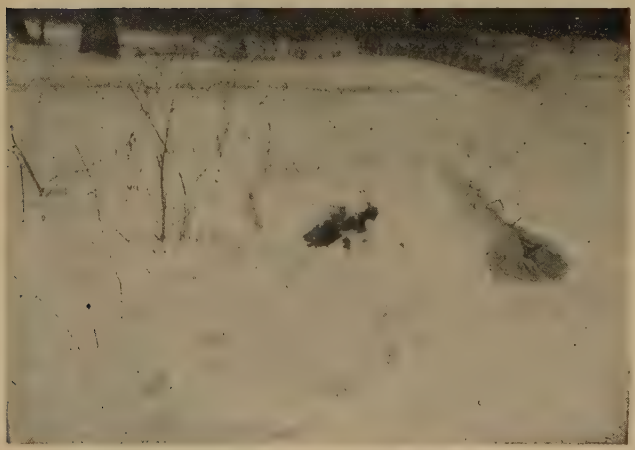


asked Harold to go and see who it was. The lad opened the door, and who should be standing there, but Saint Nicholas himself!

Now the Christmas tree dazzled with light and Santa Claus, laughing and talking and rubbing his frozen hands all the while, went over to the tree and began to take down the numerous white parcels that were hanging on the branches.

It would take too long to tell all about the presents, but you may be sure that nobody was forgotten. There was even a large dog biscuit, tied 'round with red ribbon, addressed to Pal, while Rip was the proud recipient of a huge knuckle bone!

It was almost midnight when the family went to bed. Harold was beginning to nod, though he assured them he wasn't tired. But two sleepy boys eventually climbed the stairs, wishing that Christmas came oftener.



The Fox stops at the Muskrat house, and tries to scrape a hole in it, but it is frozen too hard, and he goes on his way

Chapter XIX

TALES OF THE PLAINS

"Lead me by the hand, you north winds,
As you lead the flakes of snow;
Carve me with your touch of wonder
As we wander to and fro."

WILSON MACDONALD.

THE following morning it thawed and the boys looked with regret at the bare ground, but two days later there was a light snowfall. The lads were out in it immediately.

"Go home, Rip," said Jack, as the dog came bounding towards them. "Sorry, old chap," he added, "but you'd foul the tracks." With drooping head and tail, Rip went slowly back to his kennel, while the boys set out on their hike.

"Ah!" said Jack, "this is the very wood where a month ago, Frank and I saw a doe leading her fawn to the water's edge. As our canoe glided 'round a bend in the river, the doe caught our scent, quickly gave the alarm to the fawn, and both disappeared into the bushes. Now that the trees are bare and the ground is covered with snow, it should be easy to find some trace of them."

A clump of evergreens nearby drew the boys' attention.

"A likely place for the deer to rest," said Jack.

At that moment there was a rustling in the

bushes, and the lads caught fleeting glimpses of white tails.

"Did you see the old buck?" said Jack. "Let's go and see the tracks they left."

The large tracks of the buck were easy to recognize, while the sets of smaller and slimmer prints were quite evidently made by the doe and her fawn.

As the boys followed down the hillside, they noticed other trails in the snow. Here a fox had left his neat footprints only a short time ago. There were the tiny tracks of white-footed mice and, also, the spreading marks of the snowshoe rabbit. Farther on, large blurred footprints showed that a lynx had been prowling around. Just now, however, the boys were following the deer, and could not stop to read all these riddles.

Soon the deer trails separated, and the buck went from thicket to thicket in long bounds. At the edge of the timber the trail abruptly stopped. Had he played a trick on them? Searching on both sides of the trail, they found that he had jumped to one side among the bushes, and made off in another direction. Then, circling, he had evidently crossed the lads' trail further back and, following on the other side, watched them from a distance.

The boys now discovered that they were near the woodsman's cabin, and Jack suggested that they drop in to see him. Pal heard them coming

and began to bark. Mr. Northmoor stepped out from behind the cabin and greeted them warmly.

"Come in," he said, "and sit down. I'll join you in a minute—as soon as I've finished chopping this wood."

Jack picked up the book of photographs, and soon both boys were lost in its contents.

"Mr. Northmoor," said Jack, as the old man re-entered the cabin, "what animal is this?" and he pointed to one of the pictures.

"That's an antelope," replied the woodsman. "His history is a sad one. Years ago, when the Indians inhabited the Western plains, the antelope were even more numerous than the buffalo. They roamed freely over the broad plains in countless multitudes. In direct contrast with the heavily-built buffalo, the antelope is the perfection of grace. He is the speediest animal of the plains. Even the fleet coyote cannot hope to catch him in fair chase, and has to resort to strategy.

"Could the Indians ever catch them?" Harold inquired.

"The Indians played upon the animal's curiosity," said Mr. Northmoor. "They would hide behind sage brush and hold up a stick, with a flag waving at the top. The antelope, attracted by the unusual spectacle, gradually drew nearer, despite his natural timidity. When the animal was well

within range, the Indians would let fly an arrow, at times hitting their game.

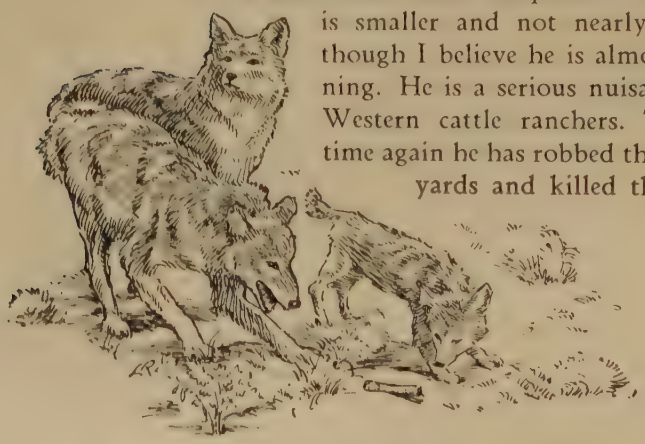
"With the coming of the White Man and his high powered rifle, the antelope had small chance of escape, and their numbers have so greatly decreased that it is a rare sight indeed to view them now on the open plains. The elk, when driven from the prairies, took to the forest and mountains. Not so the antelope. He is a creature of vast spaces, and although legislation has been enacted to protect him, it is feared that he will not long survive the encroachments of civilization."

"What sort of tracks does he make?" inquired Jack.

"They look somewhat like those of a mountain sheep," said Mr. Northmoor. "The antelope's hind hoof is different from the fore, the fore being broad and round, while the hind is slender and more pointed."

"Is this the animal that chases the antelope?" asked Harold, showing Mr. Northmoor a picture. "He looks something like a wolf."

"Yes, that's a coyote," the woodsman replied. "He is sometimes called the prairie wolf, but he is smaller and not nearly so fierce, though I believe he is almost as cunning. He is a serious nuisance to the Western cattle ranchers. Time and time again he has robbed their chicken yards and killed their sheep.



Every rancher realizes his cunning, for they have all tried numerous ways of dealing with the recreant. Strong, fleet-footed dogs have often been sent out after them. Generally the coyote leads the dogs a good chase, thoroughly enjoying the fun. Then, getting bored, he puts on a spurt, and leaves his pursuers behind.

"Returning the same night, often, he starts up the Coyote Chorus, baying to the moon. Meanwhile the dog who, at his master's command, chased the coyote during the day, joins his badly behaved cousin, and together they have great times, romping and playing about."

The boys laughed heartily at this.

"I knew one farmer," continued the woodsman, "who found some motherless coyote puppies, and carried them home. His children took a great fancy to the playful little creatures, treated them kindly, and fed them well. They responded rapidly to this friendliness, and became great pets, ever ready for a frolic. They were quite content, and evinced no desire to return to the wild life of their forebears.

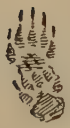
"Once during a coyote hunt I remember that a rancher's horse got his leg broken. The horse stumbled into a badger hole. Those rascals are always digging, burrowing deep into the ground. The badger is a slow fellow though, and otherwise quite harmless. In fact, in some respects he is the farmer's friend, for he consumes numerous

rodents. He is a creature of the night, his grey and white fur making him practically invisible in the moonlight."

"How would you recognize his track?" asked Harold.

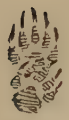
"By the prominence of the five nails of the forefeet," replied Mr. Northmoor. "In his walking gait, the forefoot is planted straight, and the clear impression of the track is spoiled by the hind foot, which is brought forward with an inward-twisting motion. On the rare occasions when he runs, his trail shows a sort of pigeon-toed gallop. He is a cleanly creature, and has the habit of changing his bedding every few days.

"But you boys must be getting hungry," he added, and he went to the kitchen, and brought out a cold roast chicken and a jar of pickles.

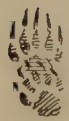


While they were enjoying this repast, the boys told Mr. Northmoor about their morning's experience in tracking the deer, and inquired how these animals managed to get through the winter.

"They gather together in bands," Mr. Northmoor said, "when the snow is deep, and choose a suitable location where bushes abound. Here the animals maintain numerous well-trodden pathways or yards, keeping to them while they feed on the tender stems of the bushes. They subsist on this scanty diet till the coming of spring.



"Don't the wolves ever find their retreat?" asked Jack.



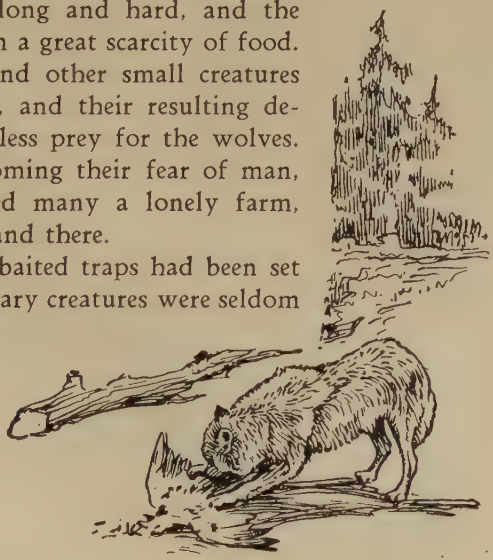
"Yes, sometimes they do, and if hungry, play great havoc among the deer, killing numbers of them."

"I'm glad there are no wolves around here," Harold remarked.

"Yes, Sir-ee," said Mr. Northmoor. "Some years ago, when I was spending the winter in a lonely settlement further north, we were all awakened one night by a long drawn-out howl. It was the midnight cry of the dreaded grey wolf, re-echoing in the distance. The dogs in the village, hearing the noise, raised their voices in the general chorus. Gradually the hubbub died down and in the morning, tracks of wolves were seen about the outhouses, where the hungry creatures had hoped to find some hapless chicken, pig, or other prey.

"Several of the villagers at once seized their guns, intending to track the offenders to their lairs, or else to scare them away from the vicinity. The winter had been long and hard, and the wolves had suffered from a great scarcity of food. Grouse, rabbits, mice and other small creatures had also felt the pinch, and their resulting decreased numbers meant less prey for the wolves. Pangs of hunger overcoming their fear of man, the wolves had haunted many a lonely farm, picking up a meal here and there.

"Poisoned meat and baited traps had been set to catch them, but the wary creatures were seldom



caught in this way, their uncanny intelligence telling them where to avoid the traps that lay hidden in the snow.

"The familiar track of one old wolf, that had been guilty of many midnight depredations in the village, was minus two toe prints. The previous winter he had been caught in a trap, and had deliberately gnawed off the toes in order to make his escape. Thereafter his trails showed with what sagacity he would evade the most cunningly set traps, and no doubt he warned the younger wolves out of his own bitter experience.

"Determined to put an end to his plunders, some of us followed up the old wolf's trail, after a fresh fall of snow. It led us through the forest and then among some low brush, where it abruptly ended. Somewhat surprised, we made a close scrutiny, and discovered that the wily animal had back-tracked on his trail, jumped to one side among the bushes, and lain there, watching the hunters go by. Taking advantage of our blunder, he had then made a hasty retreat. Thus Wayeeses proved the wisdom of his years.

"One other cold crisp morning in the middle of winter, I came across a number of round-shaped blurred tracks, showing that a band of hungry lynxes had been looking about the underbrush for some supper. A second trail converged with theirs, composed of tracks less round and with a suggestion of nails. These latter tracks

indicated plainly that the wolves were in full gallop and evidently pursuing the lynxes. A hot chase must have ensued, and the trampled snow showed where the scuffle took place. When wolves and lynxes meet there is much flying of fur, and the surrounding debris proved that at least one unlucky lynx had been devoured. Apparently this had satisfied the wolves for the time being, for their trail then turned off in another direction, showing that the remainder of the band had been allowed to escape."

The lads were thrilled with these exciting tales and would have liked to stay longer, but the waning light warned them that it was time to be going. They said good-bye to their kindly host, and started for home.

On reaching the woods, the boys noticed a slightly familiar track. "I believe it's a lynx," said Jack, remembering similar footprints on the Isle of Palms. It was now dusk and the trees took on strange forms in the eerie light.

"What's that?" said Harold pointing to something grey and shadowy, slinking away.

Then a pair of yellow eyes glared at them for a moment.

"That's the lynx, all right," said Jack, "he's following us."

The lads began to hurry and were glad, on leaving the woods, to see, in the distance, the lights of home.

Around the fire that night, they told Uncle John of what they had seen. He laughed and said that the lynx had never been known to attack human beings, but added that the wolves further north systematically chased them, often making a meal of them.

"But how can the wolves catch them?" Harold asked. "I thought the lynx could climb like a cat."

"Yes, it can," Uncle John replied, "but the wolves know that it must come down sooner or later, so they take turns watching. At last when its frozen feet can hold on no longer, the lynx jumps to the ground. The wolves are upon it immediately. One feints an attack in front, another springs in from behind, and it's all up with the lynx."

Tracks of Wolves

Trail of Fox cantering

Chapter XX

SECRETS IN THE SNOW

"The white wind waits at your door and knocks;
The white snow calls you everywhere."

WILSON MACDONALD.

THE SNOW had fallen steadily for two days, and the wind had blown it into deep drifts. Uncle John put the boys to work clearing the paths, and my! what fun it was, with Rip barking at their heels! When they had finished shoveling, they went inside and put on their snow-shoes for Harold had suggested another trip into the woods. He had been wondering how the wild folk were faring these wintry days.

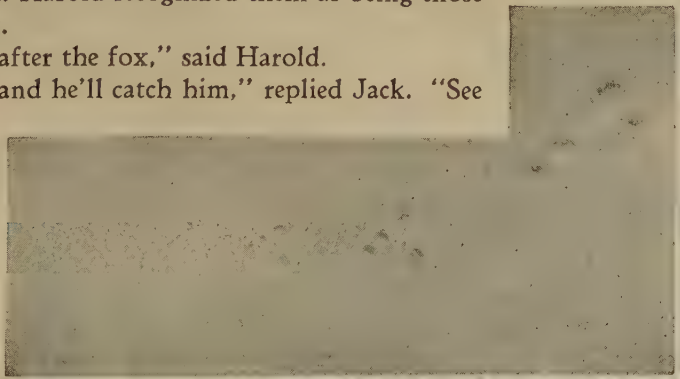
At first they found the surface of the snow unbroken. Then Harold caught sight of a familiar track. "A snow-shoe rabbit has been running about here," he said. "I guess no one catches him in winter." It wasn't long before they found that Reynard had had a good try, however, but had apparently been unable to negotiate the deep snows.

"Let's see where the fox got to," said Jack.

So they followed his trail. Soon other tracks, coming from the heart of the woods, appeared beside his. Harold recognized them as being those of a lynx.

"He's after the fox," said Harold.

"Yes, and he'll catch him," replied Jack. "See



Trail of the Varying Hare

how lightly he skimmed over the snow! He, too, seems to have snow-shoes."

The boys hurried on excitedly. Through a gap in the trees, they caught sight of a pair of struggling forms. Harold got out his glasses.

"They're hard at it," he cried, "and the fox is getting the worst of it." Yelling at the top of their voices they hastened to the scene. The lynx glared at them savagely for a moment, sprang away from his fallen foe, and vanished into the woods. Poor Reynard, torn and bleeding, struggled to his feet, and limped wearily away.

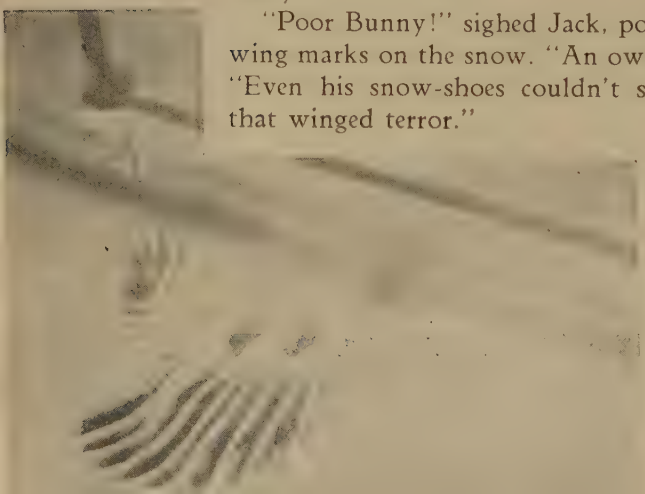
"I hope he wasn't seriously hurt," said Harold, following the fox with his eyes.

"He'll probably be all right in a day or two," Jack replied, "if no one molests him."

The boys then retraced their steps to the place where they had last seen the snowshoe. The rabbit had kept to the open.

"I guess he feels safer away from bushes and trees," remarked Harold, "but ah!—what's this?" he exclaimed, for the trail ended suddenly.

"Poor Bunny!" sighed Jack, pointing to some wing marks on the snow. "An owl caught him." "Even his snow-shoes couldn't save him from that winged terror."



A Great Horned Owl struck at a Squirrel on a tree, and missed, coming down into the snow

Chapter XXI

HOMEWARD BOUND

"The gypsy trail was pleasant to my going;
The solitude was sweet as amber wine.
And yet I only loved this vagrance, knowing
I might turn back to these old friends of mine."

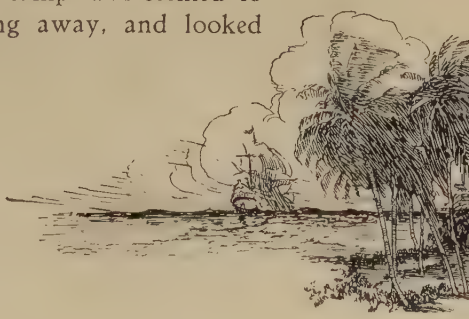
WILSON MACDONALD.

THE WEEK between Christmas and New Year flew by like a flash. Jack and Harold spent most of the time out of doors, and their cheeks grew so ruddy in the frosty air that Uncle John said they looked like snow apples.

It really was too bad, the boys thought, that they had to go back to school. If only they were as old as Frank and could stay and work on the farm! Jack thought growing up took a terribly long time.

His mother was ever so much better for the change and, as his father was obliged to return soon to his ship, they decided to all go together.

The lads paid a farewell visit to Mr. Northmoor. They promised faithfully to return to Maine, and the little log cabin, some day and begged him to come and see them, in the meantime, on the Isle of Palms. And they told him all about their Scoutmaster, their friend Mr. Beaufort, and the boys at camp. Pal seemed to know that they were going away, and looked very sorrowful.



It took a whole day to say good-bye to all the animals on the farm, and it was rather difficult explaining to the patient creatures the necessity of attending school. They looked at Jack with a sort of dumb acquiescence, but appeared to hold mental reservations on the subject.

The ride to the station, though, was great fun. Uncle John had been obliged to get out the large sleigh, and harness his best team. At the last minute Aunt Nellie had given the boys a package which, she said, contained a lunch for each traveller. Was there ever such a kind Aunt! She never forgot anything. Rip, naughty fellow, insisted on running after the sleigh, and had to be given a lift.

The train came in all too soon, and Jack could see that his mother didn't like saying good-bye to Uncle John.

"Well, Esther," he said, "patting her cheek, just as though she were a little girl, "you know where to come any time you need a change. We are going to miss you, you may be sure. Nellie was only saying last night how empty the house would seem without you all."

The train gave a warning whistle, and they had to scramble up the steps in a hurry.

A few minutes later it pulled out, and the boys kept waving from the window as long as they could see.

Just as the train curved round a bend, they caught sight of Frank's white handkerchief still fluttering in the breeze.

The
END
of the
STORY

Chipmunk

Western Kingbird twins

The photographs of animals and birds appearing throughout this book were taken by Dr. C. G. Abbott.

How to Photograph Animals and Birds

by

Clinton G. Abbott

Director, Natural History Museum, Balboa Park, San Diego, California.

THE SPORT of photographing wild birds and animals has often been compared to hunting with a gun. It is true that there are some points of similarity, but, on the other hand, the necessity for very close approach, the ingenuity required to overcome natural timidity, the tricks and devices needed to conceal the photographer, and the superior satisfaction derived when there is no sacrifice of life, really place wild life photography in a class by itself. For the camera hunter, there is no close season and every living creature is his legitimate game; while, for those who do their own darkroom work, the excitement of developing a hard-earned camera "shot" is second only to the excitement of making it.

Boy Scouts, with their natural love of outdoors, will find a true fascination in photographing wild creatures. Not only is it a genuine test of patience and woodcraft, but it satisfies the instinctive desire for "trophies," for something to collect, which mere observation fails to supply. And it is in the quality of these trophies that individual skill will show. In bird and animal photography only clear, recognizable pictures count for anything; blurs are valueless, no matter how much trouble they entailed. Even a rear view, or some other unsatisfactory pose, does not amount to much.

Efforts Well Repaid

So a Scout, in undertaking this kind of photography, must be prepared for plenty of disappointments, and

must know that success means lots of time, lots of effort. But the results will amply compensate; persons who have camped and hunted with the gun for years testify that, when they take up animal photography, they find it far more interesting than any form of outdoor sport. And it is not merely pleasure; it provides opportunity to study, in peace and quiet, the life histories of wild creatures, by which a Scout may not only enrich his own knowledge of these subjects, but may even make a definite contribution to science. Good bird and animal photographs have come to be held in the highest regard by all, and at every convention of the country's ornithologists or mammalogists, regular exhibits of bird and animal portraits are now held.

Best Types of Camera

Taking up, first of all, the matter of equipment, there are three main types of cameras: (1) the kodak or box camera type, in which a "finder" is used to locate the object; (2) the bellows type, in which the object is focussed on a ground glass at the back of the camera; and (3) the reflecting type, in which a mirror reflects the image to a ground glass on the top of the camera. It may as well be stated at once that the first type, which is the commonest sort of camera, is practically useless for photographing anything but the largest animals. These cameras are designed primarily for tourists and general snapshot work, and while admirable for picturing buildings, people, street scenes, etc., they are not fitted for "close-up" studies, without exceedingly accurate measuring.

For the widest range of nature photography, the second type of camera is by far the most desirable. A second-hand outfit with fair lens, taking a 4x5 picture, which is a good size for most subjects, can be bought for $20 to $30. Recent advances in the making of films, by which most of the desirable emulsions that were formerly coated only on glass plates, can now be had on cut films, have

done much to reduce the necessary packing weight of a photographic outfit and to abolish the danger of breakage. The purchaser of a camera will therefore secure holders adapted to the use of cut films.

Some lenses can be taken apart and, by using one half the complete lens, a picture about twice the size can be secured. This is a very useful feature in photographing shy birds and animals, as a fair-sized picture can be obtained with the camera at a considerable distance (although the length of exposure must be increased). However, these magnifying lens units require an extra long stretch of bellows, and before buying a camera, the photographer should make a focussing test to be sure that it has sufficient bellows capacity to accommodate the separate halves of the lens.

The reflecting, or third type, of camera, of which there are several examples, should be regarded as a luxury which it will be the ambition of every serious worker to own eventually. It is expensive, but is indispensable if the best results are to be obtained in taking flying birds, colonies of birds, and subjects which permit approach by stalking.

Waiting vs. Stalking

The Scout may well inquire whether the whole of wild life photography is not a process of "stalking," especially as it is a requirement for the Merit Badge by that name. In the practice of bird photography, however, it will be found that the average Scout will have far more opportunities for successful results by bringing the birds to him, so to speak, than by creeping or "stalking" after them. Most of the best bird photographs have been made by focussing one's camera on some spot where the bird has some reason to come, and making the exposure when, through the skill of the preparations, the bird, in spite of its natural shyness, actually does come.

It might be imagined that a wild bird, in full posses-

sion of the power of flight and about the last thing on earth that *wants* to have its photograph taken, would never willingly come within close range of a camera. But there are four kinds of places to which birds, by instinct or habit, return again and again, and here they can be most easily photographed. They are: (1) the nest; (2) where their young are; (3) where food or water are; and (4) some favorite perch or area. On any of these a camera can be focussed and, by exercise of patience and use of proper methods of concealment, detailed photographs of the most timid birds can be secured.

Where Camouflage is Needed

The matter of concealment is of the utmost importance. Few wild birds can accommodate themselves to the close proximity of so strange an object as a camera, with its staring glass eye. Much less can they overcome their fear of the exposed person of the operator. Camouflage and "blinds" of some sort must therefore be used. Formerly it was the common practice of bird photographers to hide the camera with leaves, weeds, etc., and to release the shutter from a distance by pulling a long thread, by making an electrical connection, or by forcing air through a long tube—with a very large bulb or even a foot-pump. This method has produced some very beautiful pictures and may be the only method feasible under certain circumstances, but a serious objection to it is the difficulty of determining from a distant hiding place—even with powerful field glasses—just when conditions are best for the exposure, especially if it has to be a time exposure. Another objection is the fact that no change or adjustment can be made on the camera without revealing the photographer.

Types of Blinds

All kinds of devices have therefore been employed to provide a hiding place sufficiently large to accommodate both the camera and the operator, which shall at the

Where a Cowbird has deposited two eggs in a Chestnut-Sided Warbler's nest

Downy nest and eggs of Mallard Duck

Photographing a Yellow-Billed Cuckoo's nest, showing dummy camera

Photographing Thrasher's nest in Ocotillo

same time "fool" the birds. Successful workers have used artificial tree-trunks, artificial rocks, and artificial rubbish heaps; they have even stalked about inside of artificial cows and sheep, with the camera lens peeping through the chest of the animal! On the other hand, much simpler types of blinds have been found equally effective. It would seem that most birds are alarmed primarily by unusual movement, and will soon accustom themselves to even a large or strange-looking object, so long as it remains motionless. A blind can be made by sewing the edges of long pieces of green cloth together, drawing in the top with a cord, and draping it over an open umbrella. One man, who believes the discomfort of cramped quarters unnecessary, has even constructed a small room on wheels, which he can tow behind his automobile, and in which he can sit at ease with his cameras, and read or write if he wishes. From this luxurious blind he has obtained admirable photographs of some of the most timid and suspicious subjects. Boy Scouts, however, will undoubtedly use their individual ingenuity in the creation of suitable hiding places. Sometimes the legs of the camera tripod will themselves provide the framework for a little tent, at others a larger booth will be made from materials at hand, and still again conditions may require simply a canvas spread over a depression in the ground.

Manipulating the Camera

Let us for a few moments discuss the varying conditions under which portraits of birds may be secured at the four kinds of places listed above. First, as to pictures of birds on their nests—positions of nests very from flat on the ground to the tops of the highest trees. In no case should a nest be cut down or its natural situation altered in order to render the task of photography easier, beyond the tying back or removing of a few intervening twigs and leaves. Half of the fun of bird photography is over-

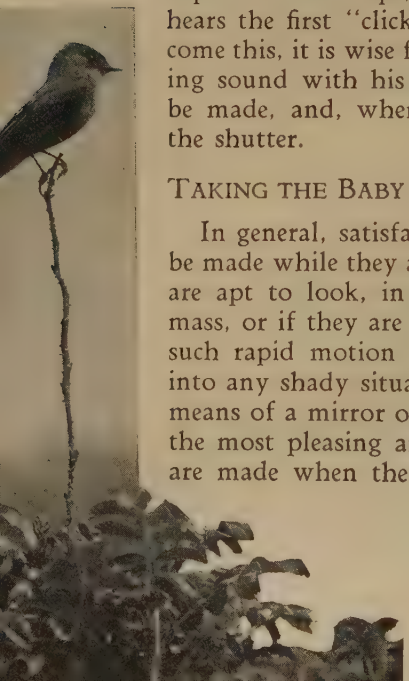
coming obstacles and sharpening one's wits to meet a given set of circumstances. There are various devices on the market, such as tilting tripod heads, ball and socket clamps, etc., that simplify the handling of a camera in difficult positions. Long poles must occasionally be bound to the tripod legs to raise the camera to the desired height, and still again the outfit must be secured by cords or friction tape in the swaying branches of a tree.

Asking the Bird to "Look Pleasant, Please"

Since many birds' nests are in leafy places, a spotty effect is obtained if photographs are made in direct sunlight. For satisfactory portraiture at these nests a diffuse light is infinitely preferable, such as when the sun is under a cloud, or in the early morning or late afternoon. Some birds can even be taught to accustom themselves to a cloth screen, placed in the branches between the nest and the sun. If the bird is sitting on her nest, she will usually remain still during the necessary length of a time exposure. She is apt, however, to turn her head when she hears the first "click" of the shutter opening. To overcome this, it is wise for the photographer to make a clucking sound with his mouth, as the exposure is about to be made, and, when the bird's attention is fixed, open the shutter.

Taking the Baby Bird's Picture

In general, satisfactory pictures of young birds cannot be made while they are still in the nest. When at rest they are apt to look, in the picture, like a mere indefinable mass, or if they are raising their heads to be fed, there is such rapid motion that extra light must be introduced into any shady situation. If desired, this can be done by means of a mirror or the use of flash powder. But by far the most pleasing and winsome pictures of young birds are made when they are old enough to leave the nest,



Phoebe "looking pleasant"

Kingbird and young

Field Sparrow and young

Chickadee on nut-ball

Red-eyed Vireo delivering food to babies

although still too young to fly well. At this age they can be perched upon a branch which has previously been arranged in exact focus of the camera and studies may be made either of the individual youngsters or, with good luck, of the parents bringing food to them.

In the case of terrestrial bird babies, many of whom can run as soon as they are hatched, some means must be devised of detaining them within the camera's focus, if pictures of the old birds are to be secured. The writer once enclosed some downy sandpiper chicks in his cap and placed it on the ground, after which he had the pleasure of photographing their mother standing on the cap where she had come in answer to the peeping of the little ones. In all cases of the handling of young birds, it is of the utmost importance that they be treated kindly and their lives not endangered. Prolonged direct sunlight will not only spoil eggs, but will kill practically all young birds. Youngsters should always be given shade, except when photographs are actually being made. No pictures can compensate for loss of life.

Devices for Attracting the Birds

Food and water as means of attracting birds for photographic purposes have yielded many beautiful portraits. In cold climates, especially, where birds come so readily in winter to feeding devices of all kinds and even to one's hand, for food, the opportunities for photography are limitless. The devices themselves, such as a hanging cocoanut or a chain of peanuts, may add to the interest of the picture. On the other hand, some photographers prefer to hide the ostensible means by which the bird was attracted, and by pressing suet into crevices of bark, for instance, they secure results in which all attention may be centered on the bird portrait.

Water, too, whether it be at the bird's bath or their drinking pool, is a source of attraction second only to food. Our friend who used the artificial cow for a blind

stood at the edge of a small pond in a field and secured the most wonderful pictures of shy birds coming to drink, the beauty of which was enhanced by their reflections in the water.

Letting the Bird Take His Own Picture

The fourth and last classification was designated as "some favorite perch or area." In this field there is the greatest opportunity of all for personal ingenuity. A few instances might be cited. Many birds use regular lookouts or resting places. A hawk will stand on a pole or a fly-catcher on a given twig. Success in securing camera shots at birds in such situations can sometimes be hastened by removing from a certain area all available perches but one, upon which the camera is focussed. The habitat of certain birds is limited, as for instance that of ducks to water and that of migrating shore-birds to beaches and mud flats. By placing the camera in an advantageous position, such birds will sometimes pass in front of it of their own accord, or with a little tactful driving can be coaxed to go where they are wanted.

Some of the stories of how birds have been "coaxed" in front of the camera make very interesting reading. One of the most romantic is that of the enterprising young man who placed a wooden fish in a pond, anchored so as to give it the appearance of basking near the surface. A fish hawk that was flying over cast a downward glance and, after circling around, hovered over the spot, while the young man watched, breathless, from his blind. Then the fish hawk plunged, and the instantaneous snap of the camera-shutter recorded a superb photograph of the bird with wings spread, talons extended, and the drops of splashing water still in the air.

A Stuffed Owl Will Help You

Other amazing pictures have been secured through the use of a stuffed owl. Practically all birds of the daylight

seem to hate an owl, and if they find one abroad they will gather round to mob and torment it. Making use of this knowledge, bird photographers have erected a stuffed owl, with a "scolding perch" close by, arranged in focus of the camera. In the intensity of their anger at their supposed enemy, some birds become almost hysterical and, losing their normal caution, provide plenty of opportunities for unusual photographs.

Using the "Dummy" Camera

Although it will be plain that no set rules can be applied to the broad field of bird photography and that each situation presents its own conditions (in fact, even the temperaments of individual birds of the same kind differ, as do those of humans), there are, nevertheless, certain methods of procedure that help toward success. One of these is the use of a dummy camera, to accustom birds to the presence of the real camera. Almost any kind of imitation will suffice—an old box, with something screwed in front to look like a lens, a cloth tacked over it, and boughs for a tripod. It should be placed far away at first and then gradually moved closer and closer, the operator, meantime, losing no time while the birds are learning their lesson. When the dummy is standing near enough for a satisfactory picture to be obtained, the real camera can be substituted and the birds will probably not notice that any change has been made. A loud-ticking clock, tied to the dummy camera, has sometimes been used to accustom the birds to the clicking of the shutter—the clock being later transferred to the real camera.

Tricks of the "Blind"

If the photography is to be done from a blind, that, too, should, if possible, be moved up gradually from a more distant location and left long enough for the birds to become thoroughly accustomed to it. These precautions are necessary to prevent frightening the birds sufficiently

to cause the possibility of their abandoning their eggs or young. Another ruse that is sometimes found of value, is for the photographer to arrange, after he is hidden in the blind, to have a companion depart ostentatiously. Few birds can count, and in some instances all that is needed to quiet their aroused suspicions is the sight of some one walking off and climbing over the fence, or rowing away from their chosen island retreat.

Coming Now to Animals

Much that has been stated hitherto relative to bird photography applies equally to the photography of animals. On the other hand, animal photography presents many problems that are not encountered in the portraiture of birds. For instance, with the exception of a few burrowing and arboreal species, their lairs are not nearly so fixed and well known as are the nests of birds; nor do they lead forth their young into the world until they are amply able to take care of themselves. But the main difference is that a large proportion of mammals are nocturnal in their habits and are seldom seen in the sunlight.

Use of the Flashlight

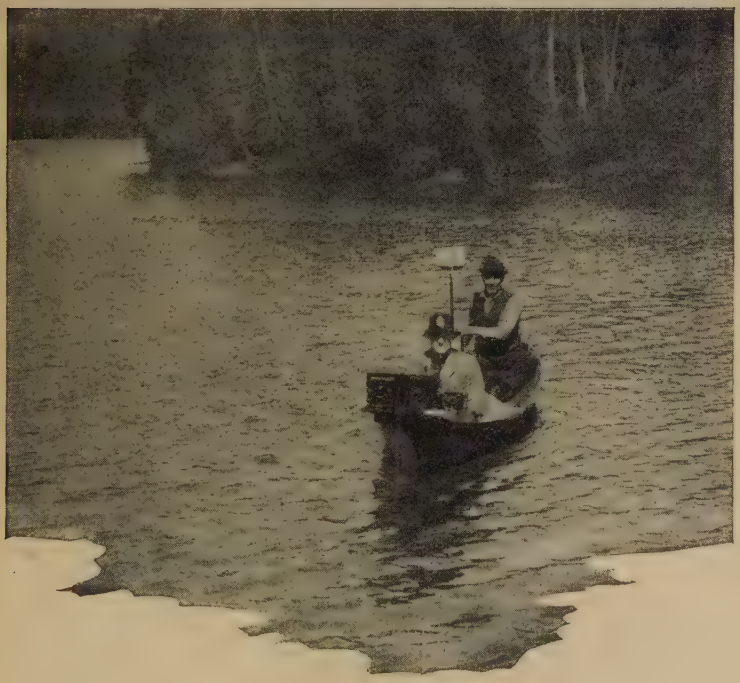
About the only way to secure pictures of such animals, except under conditions that are more or less unnatural, is to photograph them at night, by flashlight. This, as may be imagined, is no simple matter, and within the past few years a whole art of night photography has been developed by enthusiastic devotees of this sport. From the standpoint of personal excitement, no form of photography can equal "jacking" deer with a camera.

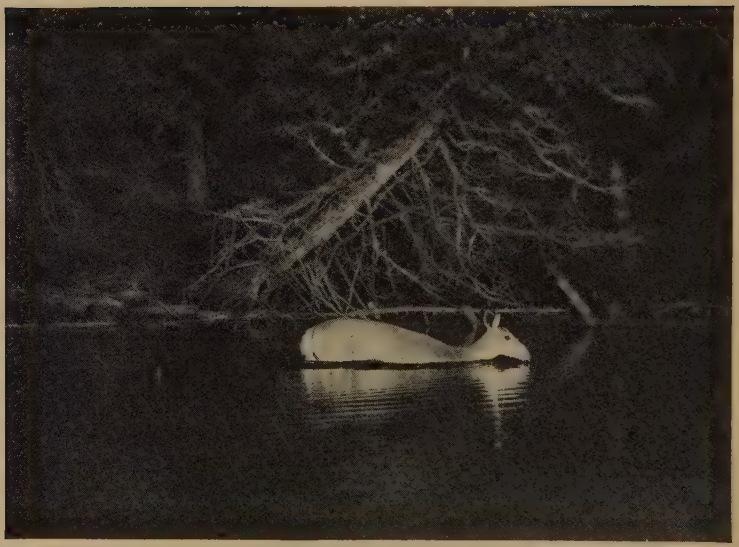
This is done from a boat on a lake or stream along the margins of which it is known that deer come to feed at night. On the bow of the boat the photographer arranges his camera—or preferably several cameras, each set at a slightly different focus, in order to offer a better chance of at least one clear picture. The operator sits directly

behind his camera, and on his hat, or some convenient support, is an electric lamp or "jack light" that can be turned on from batteries in the boat. Upon still another support is a pan of flash powder, arranged to be discharged by means of an electric squib fuse and push-button. The main essential requisite is an experienced guide, who is thoroughly familiar with the waters and who can paddle the boat without a sound.

HU-S-S-SH—A DEER!

In the dead of a summer night the two start forth and quietly skirt along close to the bank, while the trained ears of the guide are listening for the sound of a deer feeding. Often the first intimation to the photog-





Examples of good flashlight pictures

rapher that he is anywhere near a deer comes when he observes from the dark outlines of the trees against the sky that the boat is being gradually turned toward the shore. Then he sits bolt upright, in eager anticipation of the prearranged signal—three sharp shakes on the boat—for there can be no whispering in this game. And when he gets the signal, he turns on the jack lamp, whose ray streams out into the darkness and is reflected in the eyes of the deer. They stand out like two flaming balls, and the guide, having thus learned the exact whereabouts of the animal, puts full speed into his paddle and steers the boat directly toward the deer. When within thirty feet, as nearly as he can estimate, the photographer sets off the flash powder and secures his picture.

Mechanism of the Flashlight Exposure

The duration of the flash is not alone depended upon for the exposure, as it is too slow and would cause a blurring of the image. The force of the explosion is therefore used to raise an object in the pan that pulls a thread attached, through screw eyes, to the camera shutter. Rather than pull directly upon the finger release of the shutter, it is better first to place tension on the finger release by means of a spring or rubber band attached to the camera bed, and then wedge an object under the finger release to act as a prop. The thread is attached to this prop and the slightest motion pulls it away, causing the finger release to spring downward and make the exposure.

The Deer Sets off The Flash

Modifications of this system can be employed for various arrangements by which animals take their own pictures. Discharge of the flashlight and tripping of the shutter can be effected when the animal touches a wire across its runway, pulls on a piece of bait, steps on a specially adjusted electrical connection, etc. In fact, a mechanically minded Scout can doubtless work out a

"rig" that may equal in results some of the expensive devices that are now sold for photographic work of this kind. And certainly there is a weird excitement, after arranging a night set or two, to retire to one's tent and then, at some unexpected hour, to hear the loud "poom" of the exploding flashlight. Some creature has been there, but what? Only the developer will reveal the secret.

A Mouse-trap Assistant

Self-photography need not by any means be confined to night or flashlight work. In fact, Scouts should be warned of the danger connected with handling an explosive as powerful as flash powder, and some may prefer to confine themselves to daytime photography. Devices can be worked out by which a weight is released when a bird settles upon a given perch or an animal touches a trip-string. The downward force of the weight pulls the thread that is attached to the shutter-prop. Even 5-cent mouse-traps, of the usual spring release variety, have been used with good effect to provide the necessary jerk upon the release thread, when there are no human hands around to do the job. It must not be forgotten, when camera equipment is to be left exposed either by night or day, that some form of protection from rain should be provided.

Indeed, there is no limit to the possibilities and allurements of wild life photography. Not a word has been said of motion-picture work, or of stereoscopic work, or of photographing reptiles, insects, fish and plants. But just because these are not included among the requirements for a Boy Scout Merit Badge does not mean that they lack any of the fascination connected with the kinds of photography that have been described. As a matter of fact, the boy who once enjoys the satisfaction that comes from camera sport is not likely to leave any branch of it untouched. On the contrary, he is likely to become so in love with it that he will continue it on into manhood,

and throughout life it will provide an added zest to his vacations and a source of pleasure that will be the admiration and envy of his fellows.

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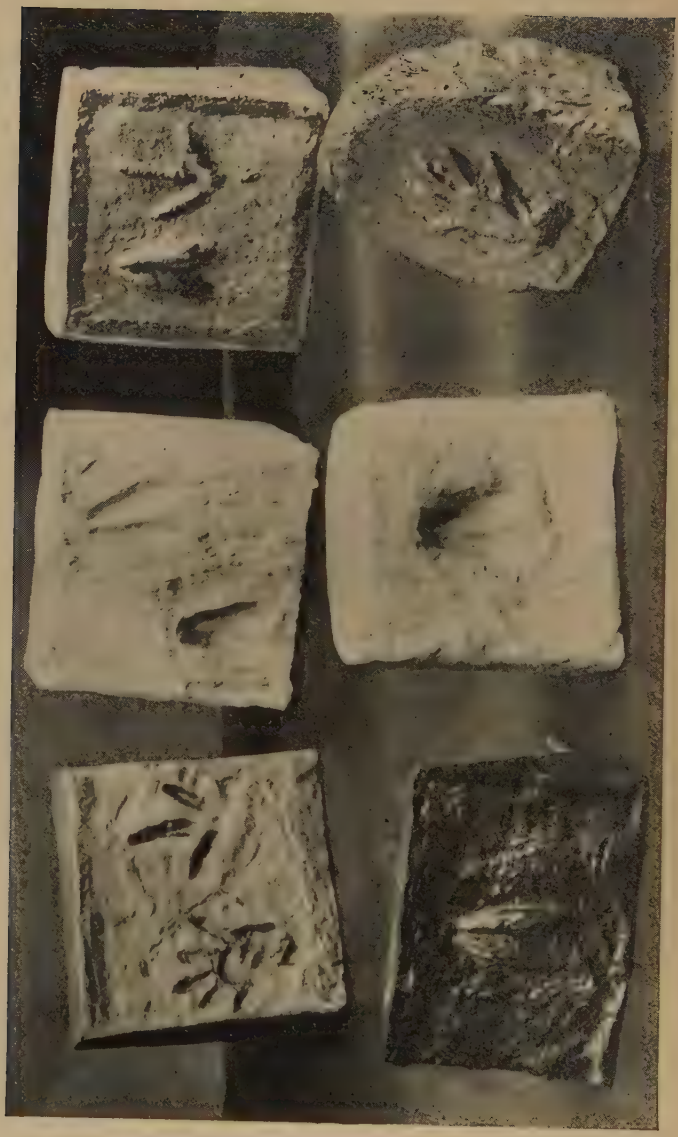


A group of plaster book ends with tracks, complete and incomplete

Hints on Making Track Casts

by

E. Laurence Palmer

EXT to making casts of tracks in mud or ice is the ease of making them from tracks in snow. Different practices have been found useful in making casts from snow on warm days and on cold days. No matter how loose and fluffy the snow may be, a perfect cast may be made on a cold day. To do this use an atomizer such as one uses to spray a sore throat. Such an atomizer may be filled in the field with water when you find the desired track. Spray the track with water from the atomizer until a firm crust has been formed where the spray freezes. When this is done you may safely follow the same directions suggested on page 26 for making casts of tracks in mud. This is particularly true if you mix some snow with the water and plaster, so that the mixture is at a temperature practically the same as that surrounding the track of which you are making the cast.

Making casts of tracks in melting snow is a more difficult task. Here no atomizer should be used, of course. Instead, merely mix as much snow into the plaster and water as you dare, and pour the plaster, while very soft, from one side of the track, allowing it to flow over the track instead of dropping on it.

Tracks in Dust

There is more difficulty in making tracks from dust than from any other sort of material. The best original system that has been found in this connection is based on the fact that salt causes plaster to harden very quickly. Take advantage of this fact in making casts from dust, by sprinkling the dust track, from a considerable height, with fine salt from a salt shaker. Then mix the plaster

and pour it beside the salt-covered dust track, allowing it to flow over the track just as it is ready to harden.

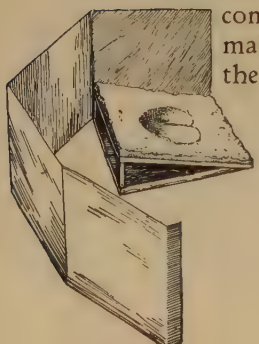
If for any reason, you wish to make a cast of a track and do not wish it to harden quickly, you will find that a little vinegar mixed with the plaster and water will delay the hardening as you desire.

Book Ends Bearing Tracks

Book ends bearing tracks make attractive and useful gifts.

The book ends may have a base 4 by 7 inches and a stand 6 inches high. The face which stands adjacent to the books is, of course, at right angles to the base, and plain. The face away from the books bears the track impressions or track elevations, as the case may be.

To make the book ends, use a piece of inch board, 6 inches by 7 inches. Around this wrap a strip of tin about 6 inches wide and 30 inches long, so that the whole resembles a box with the board as the bottom of it. A single shingle nail, tacked through the overlapping ends of the tin into the board, will hold the tin in position. Inside this box, and along one side, lay a cleat about ½ inch square. Then lay some cigar-box covers on top of this cleat so that they make a slope to the opposite side of the box. On top of this slope put a layer of modeling clay or soft mud. This, of course, will lie at an angle to the bottom. In this clay make an impression from the plaster cast of a track. Then roughen the surface of the clay uniformly, by tapping it gently with a roughly broken stone. After this is done, mix the plaster of paris and pour it into the box. For book ends you may mix concrete with the plaster, if you desire. If you wish to make the book ends extra heavy, you may imbed in the soft plaster a quantity of scrap iron on the side



which will make the bottom of the book end. While the plaster is still soft, you may scratch in it, if you desire, your initials or a legend concerning the track.

If you desire to have the track appear as an elevation on the surface of the book ends, you would, of course, make an impression in the mud as suggested. If you wish to make the track appear as a normal impression, you will have to imbed in the mud the vaseline-covered cast of the track in such manner that it will stick up into the plaster as you desire it.

When the plaster is hardened you may remove the tin and take out the rough end. With a wood file or with your knife, you may smooth the corners as you see fit. When this is done, the book end is ready for use, unless you desire to paint it. In the pictures showing the six book ends, the two middle ones are unpainted.

For painting book ends, aluminum paint such as is used for painting steam pipes and other metal work will be found useful. If you desire, this may be done in gold. Some persons prefer to put on a layer of one color and then a layer of another, and then rub the second layer down with a fine sandpapper so that the under layer shows through in spots. It is generally the practice to color the track impressions or elevations one color, and leave the major surface of the book end another color. It is also sometimes desirable to go over the finished book end with shellac or a fine varnish.

If you follow these directions you ought to have little difficulty in making very inexpensive, satisfactory, and unique Christmas presents.

In *"Cornell Rural School Leaflet"*

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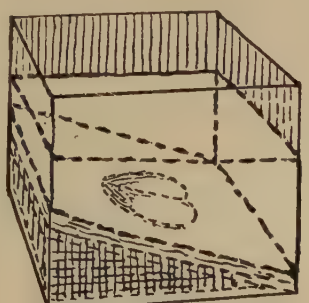

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